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FINAL REPORT

For the Florida Department of Transportation

Evaluation of Flexible Pavement Performance Life in Florida

Research Report No. FL/DOT/RMC/0670 (2)-8358

State Job No.: 99700-3515-119

WPI No.: 0510670

FSU Project No.: 6120-514-039

by

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16. Abstract The pavement performance life provides information on how long a particular pavement type will typically last before it needs rehabilitation. This study presents the research effort to estimate the average flexible pavement performance life in Florida. Two data files of Pavement Condition Survey(PCS) and Work Program Administration(WPA) were used for this study. SAS programs were applied to analyze and manipulate these two data files. The pavement performance condition curves were developed for a large sample size of pavement sections based on the polynomial model. The average pavement performance lives were evaluated for each pavement group based on the performance curves. The results of the evaluation showed that the primary system had longer average performance life than the interstate system. Generally, the polynomial model performed well in fitting the data. The pavement performance curve indicates that if M&R are performed while the pavement is still in the "slow rate of deterioration" phase, life cycle cost may be reduced.			
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METRIC CONVERSIONS

inches = 25.4 millimeters

feet = 0.305 meters

square inches = 645.1 millimeters squared

square feet = 0.093 meters squared

cubic feet = 0.028 meters cubed

pounds = 0.454 kilograms

poundforce = 4.45 newtons

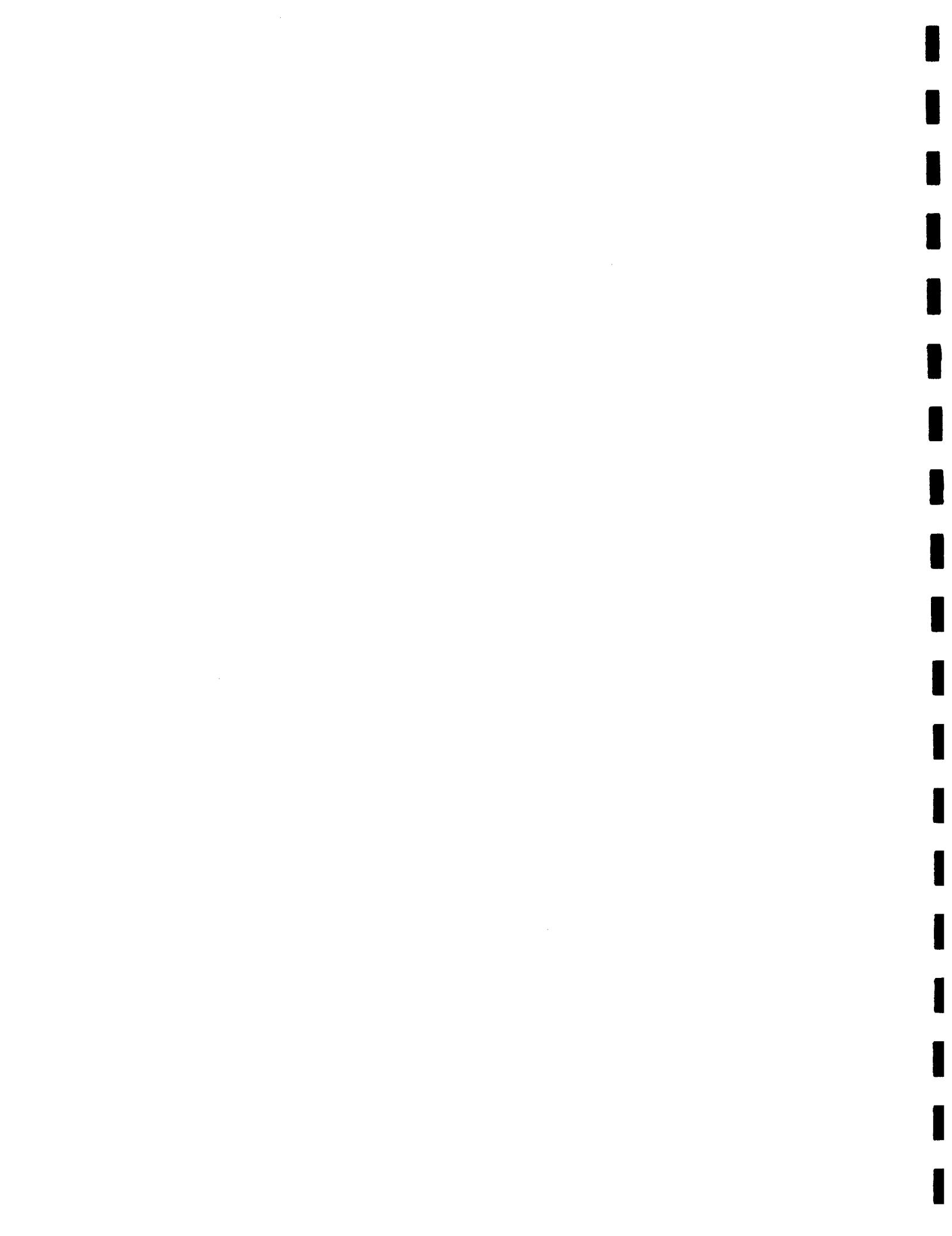
poundforce per square inch = 6.89 kilopascals

pounds per cubic inch = 16.02 kilograms per meters cubed



DISCLAIMER

"The opinions, findings and conclusions expressed in this publication are those of the authors and not necessarily those of the Department of Transportation or the U.S. Department of Transportation. This report is prepared in cooperation with the State of Florida Department of Transportation and the U.S. Department of Transportation."



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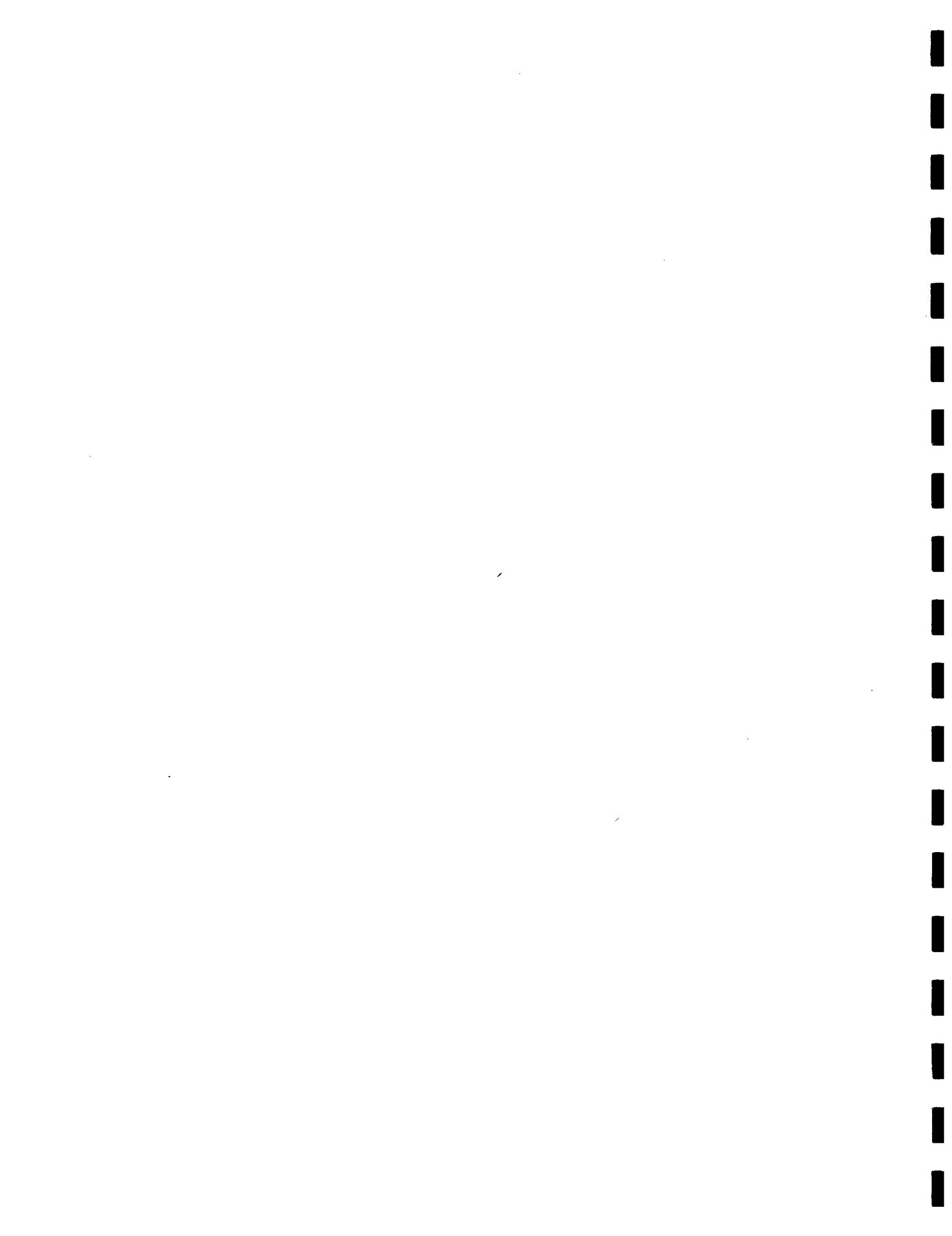
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EXECUTIVE SUMMARY

The pavement performance life provides information on how long a particular pavement type will typically last before it needs rehabilitation. This study presents the research effort to estimate the average flexible pavement performance life in Florida. Two data files of Pavement Condition Survey (PCS) and Work Program Administration (WPA) were used for this study. SAS programs were applied to analyze and manipulate these two data files. The pavement performance condition curves were developed for a large sample size of pavement sections based on the polynomial model. The average pavement performance lives were evaluated for each pavement group based on the performance curves.

The results of the evaluation showed that the primary system had longer average performance life than the interstate system. Generally, the polynomial model performed well in fitting the data. The pavement performance indicates that if M&R are performed while the pavement is still in the "slow rate of deterioration" phase, life cycle cost may be reduced.



CHAPTER 1

INTRODUCTION

1.1 Background

The development of systematic procedures for scheduling maintenance and rehabilitation (M&R) activities is one of the major concerns of state and federal highway agencies. Over the years, funding for M&R activities has not been able to keep pace with the needs, resulting in a backlog of projects for many of the agencies. Such problems demand good management of road networks and have led to increased interest in the implementation of pavement management systems (PMSs). "A PMS is a systematic approach to providing highway administrators and engineers with the types of information needed to effectively and efficiently manage their highway pavements" (AASHTO, 1990).

Pavement management engineers are usually responsible for recommending various alternatives for maintenance and rehabilitation to a number of pavements that make up the highway network. This is becoming an increasingly critical task since highway agencies at all levels (city, county, and

state) are generally operating under a limited budget that requires effective prioritization to provide the highest level of public service. Pavement management engineers are also responsible for setting up a pavement management system (PMS) and managing the collected data. Long-term pavement performance studies that develop performance models will help the engineers to evaluate the effectiveness of the PMS and determine the usefulness of the collected data.

The value of pavement performance life is of importance to pavement management activities for overall planning and budgeting activities. The pavement performance life can be defined as the number of years a particular pavement group lasts before it reaches some predetermined terminal-condition. The determination of typical pavement-life values would be very beneficial for surface-type selection activities or other life-cycle cost analysis. In the State of Florida, pavement performance information is available from pavement condition surveys back to 1976. The information allows for the study of pavement performance life in Florida.

1.2 Scope of Study

The primary objective of this study was to evaluate historical information related to pavement condition survey for determining the best estimate of flexible pavement performance life in Florida. The secondary objective of this

study was to evaluate if there are significant differences in pavement performance life by geographical region, highway system type, and type of project. The goal was to develop a pavement Age-Condition relationship model. The information used for the model development were Pavement Condition Survey (PCS) data and Work Program Administration (WPA) data provided by Florida Department of Transportation (FDOT). The data included a large amount of pavement sections throughout the State of Florida. Computer programs were developed to manipulate and sort the raw data. A sample of project old enough to have significant performance history were analyzed using SAS programs and statistical tools.

1.3 Report Organization

This report summarizes the research study of the "estimate of pavement performance life". The estimates of flexible pavement performance life for different geographical regions, highway system types, and types of project are also presented in detail in the report.

The background and the scope of this study are introduced in Chapter 1. A literature review of methods in developing pavement performance model is presented in Chapter 2. Data manipulation, model development, and model evaluation are described in Chapter 3. Determination of pavement performance life and summary of the results are presented in Chapter 4. Conclusions and recommendations

based on this study are then reported in Chapter 5. A detailed description of flexible pavement condition survey is summarized in Appendix A. The pavement condition survey data used in performance curve development are presented in Appendix B. SAS programs used in this study are listed in Appendix C. Model evaluation from SAS output is summarized in Appendix D.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Pavement management is a generic term that describes the process of managing a wide variety of activities ranging from routine maintenance tasks such as crack sealing to major projects such as pavement reconstruction. A principal mission of state and federal transportation agencies is managing a surface transportation network made up primarily of pavements. To manage the pavements, it is necessary to measure a variety of relevant attributes, including use, condition, and cost of operating the pavement network.

The measurement and prediction of pavement performance condition is an essential component of any pavement management system (PMS). It is essential to manage the pavements both technically and economically at the network and project levels. The study and the development of pavement performance models are reviewed in this chapter.

2.2 Pavement Performance Concept

2.2.1 Pavement Performance

Pavement performance has in the past generally been defined as a summary or accumulation of pavement serviceability indexes based on objective measurements of roughness and/or pavement distress. This use of the word "performance" stems from the work of Carey and Irick (1960), although their original definition left considerable room for greater generality. It should be mentioned, however, that there has been no universal agreement on the definition of pavement performance. For example, pavement performance is defined variously as: a) the ability of a pavement to provide an acceptable level of serviceability with a specified degree of reliability at an assumed level of maintenance (Kenis 1978); b) allowable repetitions of loading prior to the functional failure of the pavement (Crawford and Katona 1975); and c) the probability that a critical life of the pavement will be achieved based on the onset of critical conditions (Kennedy and Lister 1978).

Current concepts of pavement performance include some consideration of functional performance, structural performance, and safety. The structural performance of a pavement relates to its physical condition; i.e., occurrence of cracking, faulting, raveling, or other conditions which would adversely affect the load-carrying capability of the

pavement structure or would require maintenance. The functional performance of a pavement concerns how well the pavement serves the user. In this context, riding comfort or ride quality is the dominant characteristic. In order to quantify riding comfort, the "serviceability-performance" concept is used as the measure of performance for the design equations in the AASHTO Design Guide (1993). An explanation of the concept is presented as follows.

2.2.2 Serviceability-performance

The serviceability-performance concept is based on five fundamental assumptions, summarized as follows (AASHTO, 1993) :

1. Highways are for the comfort and convenience of the traveling public (User).
2. Comfort, or riding quality, is a matter of subjective response or the opinion of the User.
3. Serviceability can be expressed by the mean of the ratings given by all highway users and is termed the serviceability rating.
4. There are physical characteristics of a pavement which can be measured objectively and which can be related to subjective evaluations. This procedure produces an objective serviceability index.
5. Performance can be represented by the serviceability history of a pavement. Since serviceability is almost universally measured by using a serviceability index based

on roughness or riding comfort, the generally accepted use makes pavement performance a function of pavement roughness. However, many other factors, such as skid resistance, structural adequacy, and cracking, may be important in determining the overall adequacy of a pavement. The word "performance" is a natural candidate to describe this overall adequacy.

2.2.3 Present Serviceability Index (PSI) and Pavement

Condition Rating (PCR)

The serviceability of a pavement is expressed in terms of the present serviceability index (PSI) or pavement condition rating (PCR). PSI and PCR are composite statistic indexes derived from their constituent elements of functional and structural conditions. The contribution of individual elements to the overall indexes depend on their respective weightages assigned in the equation for calculating the composite indexes.

"The initial serviceability index is an estimate by the user of what the PSI or PCR will be immediately after construction. The terminal serviceability index is the lowest acceptable level before resurfacing or reconstruction becomes necessary for the particular class of highway" (AASHTO, 1990).

The major factors influencing the loss of serviceability of a pavement are traffic, age, and environment. Each of these factors has been considered in formulating the design requirements included in the AASHTO Design Guide (1993).

2.2.4 Measurement of Pavement Performance

The type of pavement performance to be measured and predicted is dictated by the overall objectives of the pavement management system (PMS). Broadly speaking, pavement performance can be defined in terms of two basic approaches:

1. User or Serviceability Approach -- This approach is assumed in the AASHTO Design Guide (1993), where pavement performance is defined as the assessment of how well the pavement serves the user over time. As a part of PMS, this approach enables scheduling of pavement maintenance and rehabilitation actions according to the needs of the user. The pavement performance is primarily measured in terms of roughness and at times this measure alone is insufficient for timely selection of specific pavement preservation actions.
2. Owner or Preservation Approach -- This approach assumes that a basic acceptable level of user serviceability has been provided and concentrated on measuring pavement performance in terms of pavement distresses causing an

accelerated loss of pavement serviceability and/or triggering pavement preservation actions. The objective of the performance predicting in this case is not just to forecast when the user will be dissatisfied with, or affected by, the pavement condition but also to determine the most appropriate preservation treatment and to determine the optimal time for the treatment.

The above two approaches are not as conflicting as they appear to be. They mainly show that different demands are placed on the measurement of pavement performance by administrators and by pavement design and maintenance engineers, and they show the need for an overall pavement performance characteristic.

2.3 Performance Prediction Models

2.3.1 Introduction

Pavement performance prediction models are imperative for a complete pavement management system. It is well recognized that pavements are complex physical structures responding in a complex way to the influence of numerous environmental and load-related variables and their interactions. Consequently, the task of predicting the multi-faceted responses of pavements to the battery of interrelated variables is a very difficult one which can be

accomplished only by using a number of assumptions and simplifications.

2.3.2 Variables Used for Modeling

There are various factors which influence the performance of pavements and their ability to serve the transportation facility satisfactorily. The major independent variables used in pavement performance models are pavement age, type of pavement (which include rigid, flexible, and composite), pavement structure, and pavement traffic loading (18-kip Equivalent Single Axle Loads) and volumes. Other factors such as: pavement thickness, soil type underlying the pavement and base, aggregate durability, reinforcement present in the slab, climate, and longitudinal drainage, are also used as independent variables in pavement performance model, especially in models for the project level (Cable et al. 1985).

Since the serviceability of a pavement is expressed in terms of pavement condition index (PCI) and pavement condition rating (PCR), these two are most commonly used as dependent variables in pavement performance models. The pavement performance life can be defined as the time period it takes the pavement to reach PCI or PCR of a certain value, this certain value is different by state. However, the structural performance and functional performance, such as International Roughness Index (IRI), structural

deterioration, overall distress, environment-related distress, and individual distress, are also used as dependent variables in some pavement performance models.

2.3.3 Pavements Classification

To develop pavement performance models for a pavement management system, a method of categorizing pavements must be utilized, since the pavement performance are dependent on so many factors. The simplest way is to group pavements that have similar characteristics such as surface type, traffic, and structure. This approach assumes that pavements with the same grouping will perform similarly throughout their lives. Following are descriptions of the grouping pavements:

Grouping pavements according to the types: flexible pavements with no overlay; flexible pavements with one or more overlays; composite pavements; jointed concrete pavements; and continuously reinforced concrete pavements.

Grouping pavements according to pavement rank or functional classification: interstate highway; arterials (primary roads); collectors (secondary roads); and local roads and streets (tertiary).

Grouping pavements according to the traffic loadings: pavements with more than 100 ESALs and fewer than 100 ESALs.

Grouping pavements according to pavement use: it is identified by the service rendered, such as roadways, streets, parking lots, runways, taxiways, and aprons.

2.3.4 Performance Prediction Model and Its Application

Many techniques are available for the pavement model development. The techniques include straight line extrapolation, regression (empirical), mechanistic-empirical, polynomial constrained least square, S-shaped curve, probability distribution, and Markovian.

Performance prediction models may be categorized into two kinds: deterministic and probabilistic. Deterministic models include primary response, structural performance, functional performance, and damage models. All of the preceding models may be either empirical, implying they are developed from regression analysis, or mechanistic-empirical correlation. For the latter type, a combination of mechanistic and empirical parameters enter the prediction model. Probabilistic models include Markov chain (MC) models and survivor curves (George et al. 1989).

The empirical-mechanistic model requires a variety of data on factors that affect the rate of deterioration; these include traffic loads, pavement layer thicknesses, materials, subgrade strength, environmental factors, and construction technique.

A number of pavement performance prediction models have been developed in the past. These models are evaluated in terms of their data requirements, expected modeling effort, and prediction accuracy.

2.3.4.1 Straight-line extrapolation

The simplest condition prediction is based on a straight-line extrapolation of the last two condition points (see Figure 2.1 for illustration). This method is applicable only for individual pavement sections and does not lead to the development of a model that can be used with other pavement sections. The method assumes that traffic loadings and previous maintenance levels will continue as in the past. This method requires that at least one condition measurement has been performed since construction, thereby providing two points: an initial pavement condition that can be assumed at the time of last construction, and a second pavement condition determined at inspection time. The straight-line extrapolation is used because it is not known whether the rate of deterioration is likely to increase or decrease.

Although this method of predicting deterioration is accurate enough for a short period of time (a few years), it is not accurate for long periods of time. Also, the straight-line extrapolation method cannot be used to predict the rate of deterioration of a relatively new pavement or a pavement that has recently received major rehabilitation.

2.3.4.2 Regression (empirical) model

Regression analysis is used to establish an empirical relationship between two or more variables. Each variable is described in terms of its mean and variance. Several forms of regression analysis are used, and the simplest form is linear regression between two variables (see Figure 2.2 for illustration); the model is described as:

$$Y_i = \alpha + \beta X_i + \varepsilon_i \quad (2.1)$$

where

Y = dependent variable, that is, condition indices

X = explanatory or independent variable, that is,
time since last major rehabilitation

ε = prediction error

α, β = regression parameters.

The mean or estimated value of Y_i , $E(Y_i)$, for each value of X_i , can thus be determined as:

$$E(Y_i) = \hat{Y}_i = \hat{\alpha} + \hat{\beta} X_i \quad (2.2)$$

Where \hat{Y}_i , $\hat{\alpha}$, and $\hat{\beta}$ are estimates of Y_i , α , and β , respectively. The values of $\hat{\alpha}$ and $\hat{\beta}$ are determined so as to minimize the sum of squared errors of the observed values Y_i from their estimates \hat{Y}_i .

The linear regression model was used in the state of Minnesota Department of Transportation (Lukanen and Han 1994), where the linear model was used to characterize PSR

(present serviceability rating) versus pavement age. It was also used to predict the pavement performance life.

General Linear Model (GLM) was used for developing specific performance curves for the Iowa Department of Transportation in terms of Present Serviceability Index(a measure of ride), pavement age, pavement traffic loadings (18-kip Equivalent Single Axle Loads), environmental and pavement design considerations.

2.3.4.3 Mechanistic-empirical model

A pure mechanistic approach to modeling is applicable only to calculating pavement response (i.e., strain, stress, and deflection). This response is normally caused by forces created by traffic, climate, or a combination of the two. Pure mechanistic models for calculating stress and strain cannot be classified as prediction models. However, the calculated stress and strain can be used as input (independent variable) to a regression (empirical) predicting model as presented in the previous section. A prediction model developed using regression technique with pavement response as the dependent variable is called a mechanistic-empirical model.

An example of a mechanistic-empirical model is that used for predicting asphalt pavement fatigue life (N),

$$N = A * (1/e)^{**B} \quad (2.3)$$

In this prediction model, the strain "e" produced by wheel loadings is calculated mechanistically. The coefficients A and B , however, are determined using regression techniques.

This method was also used in the state of Mississippi Department of Transportation (George et al. 1989). They concluded that the empirical-mechanistic model requires a variety of data on factors that affect the rate of deterioration. These included traffic loads, pavement layer thicknesses, materials, subgrade strength, environmental factors, and construction techniques.

2.3.4.4 Polynomial constrained least square

This is one of the most powerful techniques for predicting the change in a variable Y_i (i.e., PCI or roughness) as a function of one variable X_i (i.e., age or traffic). Given the observations:

$$(X_i, Y_i) \quad i=1, 2, \dots, n$$

A polynomial of degree, n :

$$P(X) = a_0 + a_1 X + a_2 X^2 + \dots + a_n X^n \quad (2.4)$$

where $a_0, a_1, a_2, \dots, a_n$ are regression parameters.

is established such that a least squares fit is obtained and the desired constraint is met. Figure 2.3 graphically illustrates the method. This method was applied by North Dakota (Johnson et al. 1992). They used this method to develop the pavement prediction curves for overall distress index, structural index, and roughness index. The benefits in using the nonlinear analysis include:

- The process is adaptive to incorporation of the expert system approach;
- Annual updates to the performance curves are readily accomplished;
- The software side is simplified as performance curves are easily added, changed, or subtracted; and
- The data-filtering procedure indicates the goodness of fit concerning the pavement category groupings that have been made and indicates whether any grouping changed should be made.

2.3.4.5 S-shaped curve

Similar to the polynomial constrained least squares, the S-shaped curve (see Figure 2.4) fitting technique is useful when predicting the change in a variable, Y, as a function of one variable, X. Smith (1986) used an S-shaped model for relating PCI to pavement age. The model had the form

$$PCI = 100 - \rho / (\ln(\alpha) - \ln(AGE))^{**}(1/\beta) \quad (2.5)$$

where ρ , α , and β are constants.

San Francisco Bay Area used S-shaped curve approach to adjust the present and future projected condition of a pavement in terms of the distress based on pavement condition index (PCI) to reflect the influence of maintenance and rehabilitation (Smith et al. 1985). Minnesota Department of Transportation applied the S-shaped curve to model the relationship between various distresses and pavement performance age (Hill 1985).

2.3.4.6 Probability distribution

A pavement condition measure such as the PCR (pavement condition rating) or IRI (international roughness index) can be treated as a random variable with probabilities associated with its values. A probability distribution describes the probabilities associated with all the values of a random variable.

The use of probability distribution in predicting pavement condition requires the knowledge of the distribution law for the variable being predicted. This technique is particularly useful for individual distress prediction.

2.3.4.7 Markovian model

The Markovian technique has been described in detail by Butt (1991). In this technique, a pavement condition measuring scale is divided into discrete intervals called condition states. For example, the PCR (0-100) can be divided into 10 condition states each 10 points wide. The PCI condition states will be used to illustrate the Markovian technique; however, the same can be repeated for any other condition measure.

The technique is based on determining the probabilities associated with pavement in a given condition state, either staying in that state or deteriorating to the next state after one duty cycle. A duty cycle can be a 1-year effect of weather and traffic loading, or a similar measure. A state vector indicates the probability of a pavement section being in each of the states in a given duty cycle. This is illustrated in Figure 2.5. At age 0 (duty cycle 0), the vector is (1, 0, 0, 0, 0, 0, 0, 0, 0, 0,), which means that it is assumed that the probability is 1.0 that a pavement section will be in state 1 at duty cycle 0. Figure 2.6 and 2.7 show the quality of fit using the single zone and multiple zones, respectively.

A Markov decision process was used as the basis for a Pavement Management System (PMS) developed for the Kansas Department of Transportation (KDOT) (Kulkarni et al. 1983). The Markov model has following advantages:

1. Given the most recent actual condition rating of the pavement, the Markov model, using that value as its origin state, can predict performance from that point on rather than having to use an average regression curve.
2. The information as to the pavement's performance up to that origin state can be brought to bear on future predictions.
3. The probabilistic nature of the Markov Chain facilitates the measurement of risk associated with pavement performance and network health.

These and other attributes make the Markov Chain model a highly desirable approach to pavement performance prediction.

2.3.4.8 Expert opinions

Methods for the elicitation of expert opinions vary depending upon whether a deterministic or a probabilistic prediction model of pavement performance is to be developed. For a deterministic prediction model, the interest is in the expected pavement behavior, and the likelihood of significant departures from expected behavior is considered to be negligible and hence ignored. Methods for eliciting expert opinions appropriate for this situation include: (a) estimating time to reach threshold pavement condition, and (b) sketching expected performance curves. If a

probabilistic performance prediction model is to be developed, both expected behavior as well as likelihood of behavior different from expected must be assessed. The parameters of such a model may be estimated based on subjective assessments using one of the following methods: (a) sketching expected performance curves as well as a band of uncertainty around them, (b) estimating probabilities of going to different pavement conditions following alternative rehabilitation actions, and (c) estimating probability distributions of the rate of pavement deterioration.

Descriptions of the various methods to elicit expert opinions are provided elsewhere (Kulkarni 1985).

Figure 2.1 Straight-Line Extrapolation (From Shahin 1994)

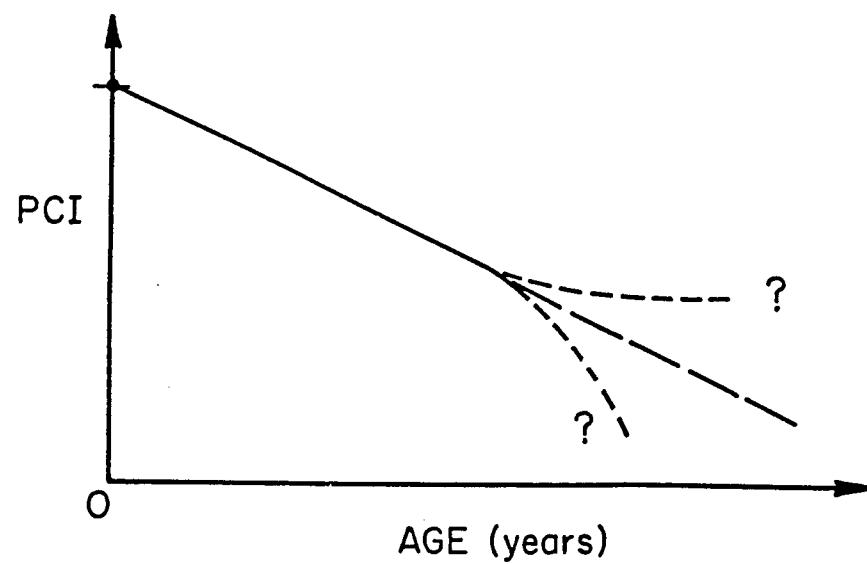


Figure 2.2 Regression Line (From Shahin 1994)

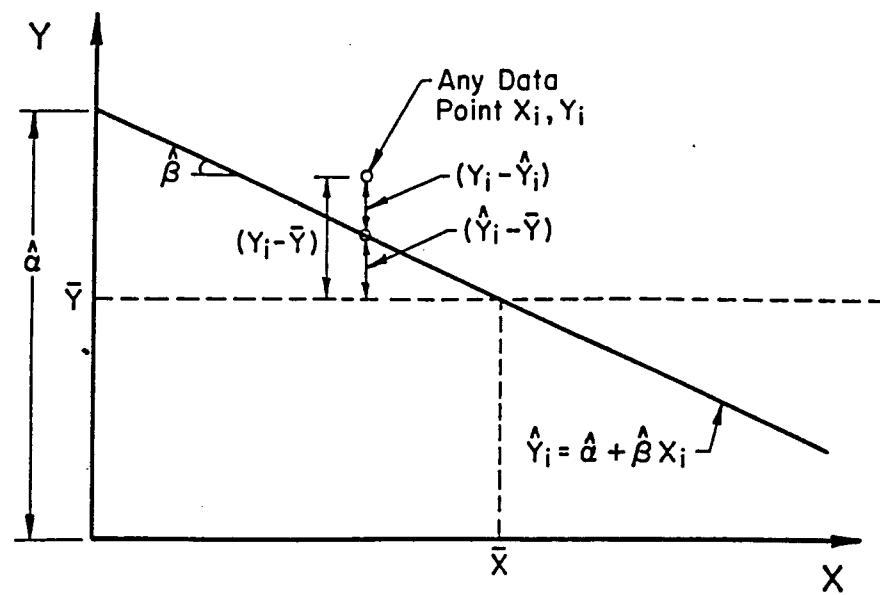


Figure 2.3 Example Constrained and Unconstrained Fourth-Degree Curve
(From Shahin 1994)

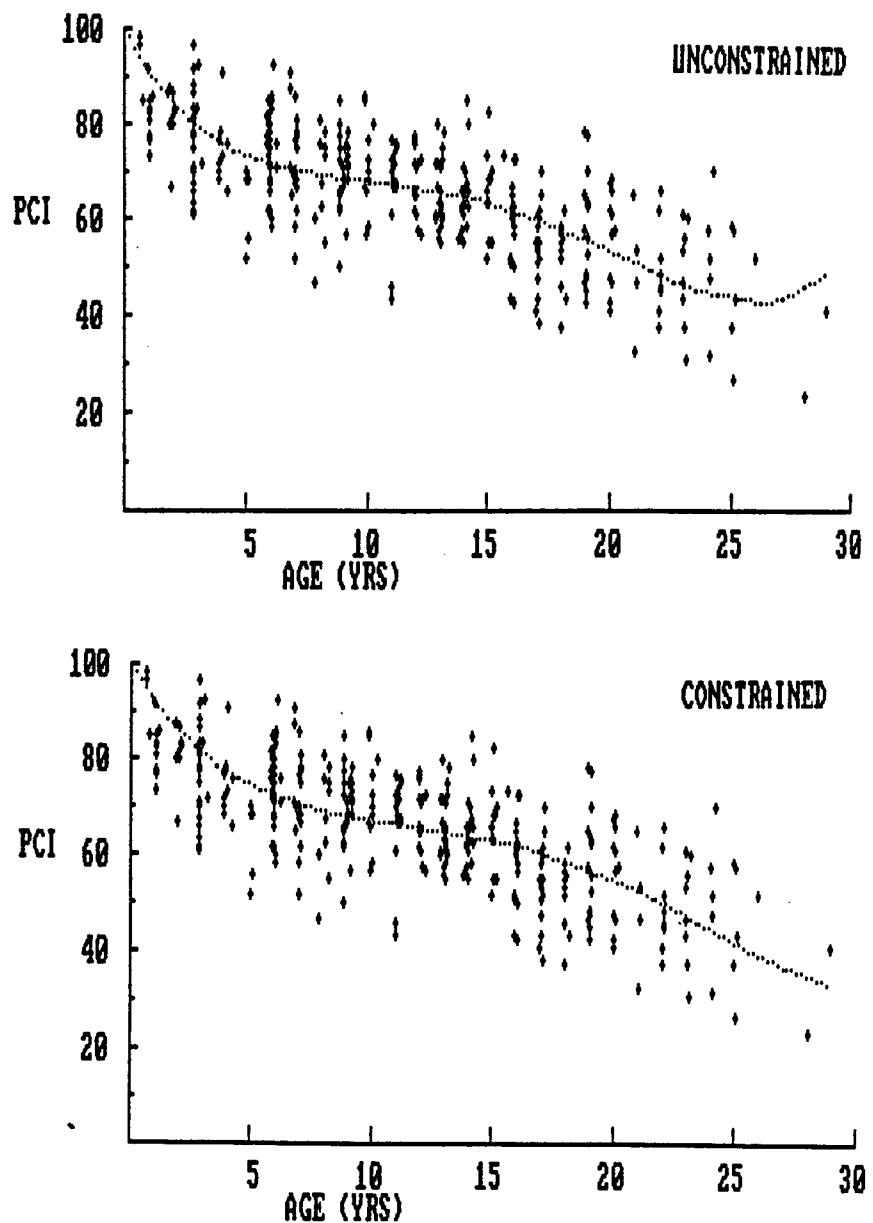


Figure 2.4 S-Shaped Curve (From Smith 1986)

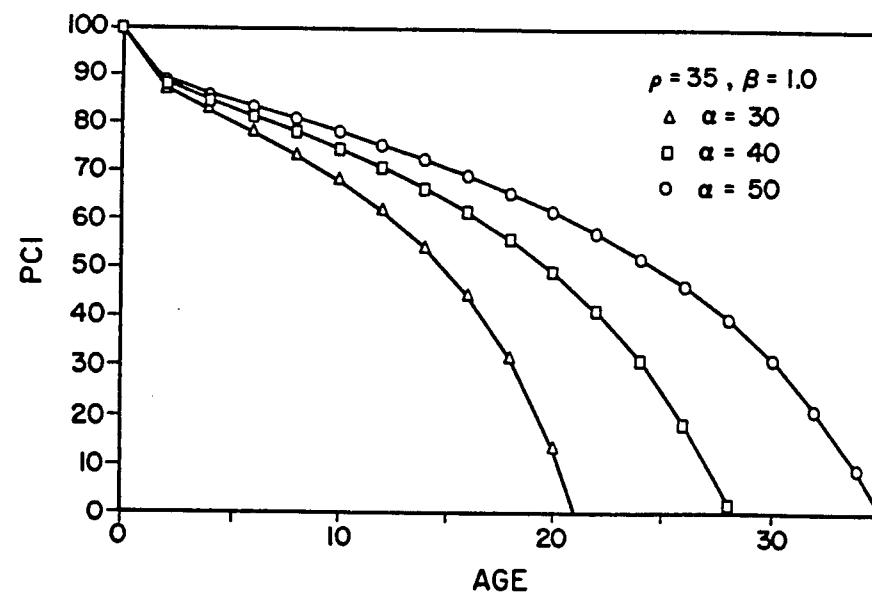


Figure 2.5 Probability of a Pavement Section Being in Each of the States in Given Duty Cycle (From Shahin 1994)

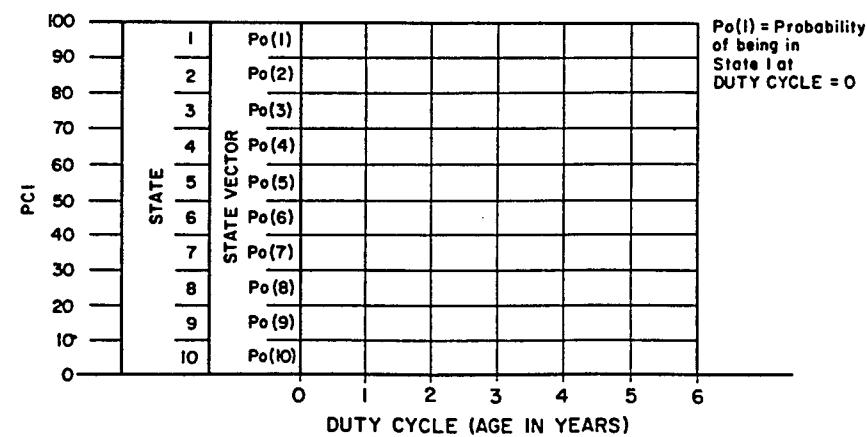


Figure 2.6 Markovian Single Zone Prediction (From Butt 1991)

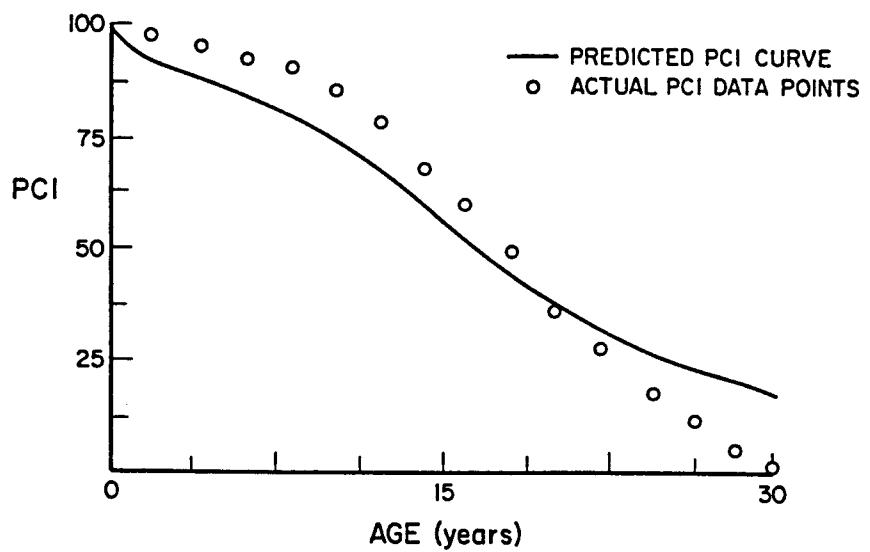
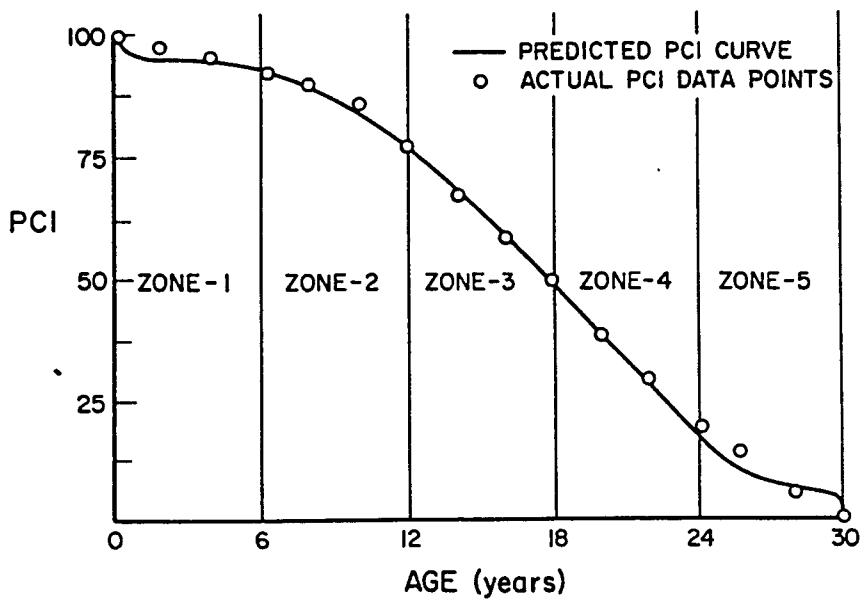


Figure 2.7 Markovian Multiple Zone Prediction (From Butt 1991)



CHAPTER 3

DEVELOPMENT OF PROCEDURES FOR PAVEMENT PERFORMANCE

3.1 General

The information of pavement performance life for a typical type of pavements is of importance to pavement management activities for overall planning and budgeting activities. One of the purposes of estimating the pavement performance life is to provide information on how long a particular pavement type will typically last before it needs rehabilitation for pavement management personnel in the area of cost-benefit analysis or life-cycle cost analysis for the various pavements. In reality the actual pavement condition survey data do, however, show that pavements are rehabilitated for reasons other than condition and that budgeting on the basis of pavement management needs to take into account the reasons for pavement rehabilitation not related to condition. The pavement management personnel can only characterize how long the pavement last done by searching the pavement condition survey data bases to determine how long a particular pavement was in service

before it was overlaid or reconstructed. Therefore, the technique for estimating the real pavement performance life based on the pavement deterioration curve provides a fundamental tool to aid in the planning and cost allocation of M&R alternatives.

Currently, the Florida Department of Transportation (FDOT) maintains more than 38,000 lane miles of roadway. About ninety six percent of the roadway consist of flexible pavements. Since major portion of the roadway network in Florida are made of flexible pavements, the following study is conducted only on flexible pavements.

3.2 Current Pavement Condition Rating Survey

In quantitative terms the pavement condition is generally expressed as a pavement condition index (PCI) or other similar indexes. Pavement condition index was developed to provide engineers or pavement management personnel with a numerical value indicating overall pavement condition. Pavement condition index is the key pavement condition indicator that is used for planning, programming, and scheduling highway pavement improvement projects. Pavement Condition Rating (PCR) is the index used for Florida Department of Transportation (FDOT). PCR is an attempt to get an overall rating of the pavement as a function of the other three indices, which are crack, ride, and rutting. The pavement condition rating is of interest to Engineers of the

Pavement Management, Design, Planning, and Maintenance as well as other groups within FDOT.

FDOT evaluates pavement condition by using PCR's values, which are assigned by panels of expert raters in conducting field inspections each year. The flexible Pavement Condition Rating (PCR) procedure, outlined in Flexible Pavement Condition Survey Handbook (FDOT, 1994), is used by FDOT to assess current flexible pavement conditions. Pavements are rated on the basis of the distress observed. The value of PCR is the lowest of the crack, ride, and rutting ratings. These ratings are all on a 0 to 10 point scale, with 10 representing a pavement in excellent condition and 0 indicating a pavement in the worst situation. For a guidance in assigning PCR ratings, panel members consult a manual that illustrates various pavement types and conditions with photographs accompanied by distress descriptions and PCR ratings.

The Flexible Pavement Condition Survey consists of monitoring the type and extent of cracking. In addition, the quality of ride and rut depth are monitored using a profiler. The survey is intended to establish the condition of the State maintained roadway system. A detailed description of the flexible pavement condition survey is presented in Appendix A.

The methods used to collect the surface distress data include windshield surveys (surface defects, cracking,

patching, surface deformation such as ripping or shoving) and automated surveys using noncontact sensors to obtain profile information at traffic speeds (surface deformation: rutting as longitudinal profile variation). The International Roughness Index (IRI) is a standardized roughness measurement that is measured in units of a slope (in/mile, or m/km) from longitudinal road profiles. Roughness is viewed in terms of the distortion of pavement surface, which contributes to an undesirable or uncomfortable ride. The outside wheelpath, as a non-filtered index, is used to relate a roughness measure to overall ride quality.

Pavement condition ratings including crack, rut and ride ratings are stored in the data base to the tenth of a point accuracy, but are reported to the nearest integer value. For example, a rating of 6.4 would be reported as a 6, while a 6.5 rating would be rounded up to a 7. A reported rating of 6 or less is considered a deficient pavement. The point at which pavements are rated as deficient is the most important level to predict.

3.3 Concept of Pavement Performance Life

Pavement condition changes with time. The pavement performance period, often referred to as the design period, is defined as the period of time that an initial (or rehabilitated) structure will last before reaching its terminal serviceability (AASHTO 1993). The pavement

condition rating for an initial pavement is an estimate by the user of what the pavement condition rating will be immediately after construction or rehabilitation. The terminal pavement condition is the lowest acceptable level before resurfacing or reconstruction becomes necessary for the particular type of highway. The point beyond which the rate of pavement deterioration and the cost of applying preventive localized maintenance increase significantly is defined as the critical PCR. In Florida, the Pavement Performance Life is defined as the time period it takes the pavement to reach a deficient rating of 6.4 (PCR = 6.4).

Pavement life is typically thought to imply the length of time a pavement could last without losing bearing capacity, function, or safety. However, the life of a pavement can be extended by active maintenance or shortened by rehabilitation for reasons other than condition. Therefore, actual pavement life is not exclusively an indicator of structural or functional failure; it is, however, an indicator of overall management practice.

It is not reasonable just to use the number of years a pavement was in service before it was rehabilitated as the value of pavement performance life for the following reasons:

- The results reflect only the life of those that have been rehabilitated. Say, for instance, a pavement constructed 15 years ago was rehabilitated, and another pavement constructed at the same time is still in service and in

good condition. A pavement-life estimate cannot be based only on the pavement that was rehabilitated, because that value does not take into account the surviving section.

- Many pavement sections are rehabilitated before their condition would warrant it. If a pavement was rehabilitated when its PCR was above a critical value (the lowest value of PCR that public user can accept), the data would not be representative of the number of years the pavement could be in service.

3.4 Pavement Performance Modeling Procedure

Many methods for modeling pavement performance are available. The method applied in this study involves organizing the pavement network into "families" of pavements that perform in a similar manner for data manipulation and model development. The modeling procedures are discussed below.

3.4.1 Pavement Families

In order to estimate or predict pavement performance life, all of the pavement sections used in analysis were grouped into pavement families. A pavement family is defined as a group of pavement sections with similar deterioration characteristics. The pavement sections were broken down by geographical region or districts at first. There are total

of seven districts in Florida (Figure 3.1). Then the pavements sections were further divided into four subgroups within each district on the basis of system type. Four system types were classified including primary, toll, interstate, and turnpike. In all, 28 groups could be formed for the model development and analysis.

The majority of state maintained pavements in Florida are primary roads and interstate highways. The large portion of rehabilitation activities that were done in the past were resurfacing. Therefore, the pavement performance analysis was concentrated on two systems, Primary and Interstate, with resurfacing projects. Also, a sample was drawn from new construction and reconstruction for the purpose of performance life analysis.

3.4.2 Data Sources

The starting point for the model development was the FDOT's performance data base. FDOT has Pavement Condition Survey (PCS) data on state maintained roads with flexible pavements since 1976. The data base contained 7203 pavement sections on the state highway system. The primary data sources used in this study were Pavement Condition Survey (PCS) data and Work Program Administration (WPA). They were downloaded from FDOT main frame data bases and were condensed for PC computers. One data file was named PCSNEW.SD2, and the other was called WPASV502.SD2.

File PCSNEW.SD2 was extracted from pavement condition survey data base. A sample of data set from PCSNEW.SD2 is shown in Table 3.1. The complete records were sorted in accordance with the twenty eight pavement families. The distribution of number and percentage of observations and surveyed pavements segments among the pavement families for PCSNEW.SD2 data file are summarized in Table 3.2 and Table 3.3, respectively.

File PCSNEW.SD2 contains the historical performance information of statewide pavements. The variables in this data file are explained in detail as following:

- Rdwyid: Rdwyid is roadway ID coded as 8 digits number. The first two digits represent the county code, digits 3 to 5 are sequence number, and digits 6 to 8 are subsequence number. The location of pavement section can be identified by rdwyid through a specific map.
- Contydot: Contydot is coded as two digits number indicating the county name. For example, "01" represents Charlotte county.
- System: Pavement system is a functional classification. Five systems are classified for all of the pavements. They are Primary, Secondary, Toll, Interstate, and Turnpike. The codes used for systems are: "1" -- Primary; "2" -- Secondary; "3" -- Toll; "4" -- Interstate; and "5" -- Turnpike.

- Type: Type is the type of rehabilitation activity done to the section of pavements. One digit number was used for the code purpose. "0" -- exceptions not State maintained or exceptions duplicated under another county section number or an exception that is added under rigid pavement survey; "1" -- Asphalt concrete surface course; "2" -- Surface treatment or pavement improvement without new construction (intersection improvements, wheelpath leveling, bridge approach or area resurfacing); "3" -- skin patch; "4" -- portland cement concrete; "5" -- new construction; "6" -- section defected with no ride; "7" -- new pavement (overlay); "8" -- under construction; "9" -- structures or exceptions that are State maintained.
- Beg: Beg stands for beginning mile post of the roadway section.
- End: End gives the ending mile post of that road section.
- Cracks: The value of cracks comes from the pavement crack rating score. The higher value of cracks indicates the better condition of the pavement.
- Ride: The value used for ride is the ride rating score.
- Rutting: The score of distress rutting is used for variable rutting.
- PCR: PCR is the smallest one of cracks, ride, and rutting.
- Roadwyside: There are three types of roadwayside. C -- composite; L -- left; and R -- right.

WPASV502.SD2 file was extracted from Work Program Administration data base. It gives wpitemno, type of project, etc. information. There were 3,755 observations and 19 variables in WPASV502.SD2 file. Table 3.4 shows a sample data set from WPASV502.SD2 file. Table 3.5 gives the distribution of observations of this data file among the type of projects.

File WPASV502.SD2 includes the variables which are described as follows:

- ◆ Wpitemno: It is a seven-digit number used to identify a project. The first digit represents the district (exception: 0 stands for state wide project, which is not located in any one of specific district). The second and third digits represent the program component. Digits four through seven are a unique sequence number by county within each district.
- ◆ Rdwyid: is as the same as explained in PCSNEW.SD2 data file.
- ◆ Localnam: Localnam is the location of the project or pavement section.
- ◆ Wpkmix: Wpkmix is coded as 4 digits number indicating the type of project.
- ◆ Contydot: is the same as in PCSNEW.SD2.
- ◆ Whphase: Coded as two digits number. It means project phases. For example, code "40" is for construction.

- ◆ **Fiscalyr**: is the year the project was adopted.
- ◆ **Pgmno**: is the 4 digits number representing the type of project. For example, code "6540" stands for turnpike resurfacing.
- ◆ **Maxcontr**: is the money contracted for the project.

3.4.3 Data manipulation

The SAS software is a combination of programs originally designed to perform statistical analyses of data, conduct complex data management, and provide a high-level programming language. A number of SAS programs were executed to manipulate those two data files. The function of each of the programs is discussed below:

1. PCSORT.SAS (see Appendix C) Program PCSORT.SAS is written to sort the PCSNEW.SD2 data set into 28 family groups in order to keep the data size manageable in a PC computer.
2. WPASORT.SAS (see Appendix C) WPASV502.SD2 data file was divided into 3 sets in accordance with type of project by using WPASORT.SAS.
3. SEGDEF.SAS (TTI 1995) In pavement condition survey data base, the limits of some rated pavement segments did not remain the same from year to year. A program called SEGDEF.SAS was executed on data file PCSNEW.SD2 to divide the PCS segments into uniform sections across the years using procedures developed by FDOT. A pavement section is

a portion of the pavement that has uniform construction history, Pavement structure, traffic patterns, and condition throughout its entire length or area. Sections are used as a management unit for the selection of potential maintenance and rehabilitation projects.

4. CYCLEDEF.SAS (FDOT 1995) Maintenance and rehabilitation (M&R) activities upgrade pavement condition to a certain level and foster a new life cycle for that pavement segments. This is clear if we take one pavement section condition data making a plot (Figure 3.2). It is easy to visualize the effects of major maintenance, rehabilitation, or renovation on the condition of the pavement. These activities produce a substantial, immediately identifiable correction of deficiencies, represented by abrupt improvements in the condition curve, as shown in Figure 3.2. So, many of segments included in PCSNEW.SD2 may have more than one performance life cycle. Program CYCLEDEF.SAS is a cycle definition program used to define the life cycles of each segment in the PCSNEW.SD2 data file based on the cracking rating score. In this program, a new life cycle starts if:

- ◆ the field TYPE in the PCS database has a value of "7" indicating an overlay; or
- ◆ the crack rating increased by at least 1.5 points from its previous value and the new rating is 8.5 or higher.

During the process of program CYCLEDEF.SAS, some new variables, such as AGE and CYCLE, were added into data base, and certain conversions were performed to make the data compatible with the type of pavement performance models. For example, years were converted to ages, with an age of zero corresponding to the year of new construction or major rehabilitation. The resulting data files were then screened to eliminate extremely short sections (0.5 mile or less).

5. BRKRLC (FDOT 1993) SAS macro BRKRLC combined two data sets of PCSNEW.SD2 and WPASV502.SD2 by rdwyid, rdwyside, beginning mile post by creating new records with common milepost breaks based on rdwyside for PCSNEW.SD2 and WPASV502.SD2 since the mile post breaks in PCSNEW.SD2 are different from that in WPASV502.SD2. The program keeps composite rdwysides same if no right or left individual rdwyside match is made.
6. WPAPCSY.SAS (see Appendix C) This program modified from WPAPCSY1 (FDOT 1995) was used to extract new construction, reconstruction, and resurfacing projects for a selected fiscal year, and combine them with PCSNEW.SD2 data.

To keep the size manageable in a PC computer, the programs SEGDEF.SAS, and CYCLEDEF.SAS were run on each of pavement families. A flow chart is summarized in Figure 3.3 to illustrate the sequence of running these programs.

3.4.4 Sampling Process

The roadway IDs were identified first from each of seven districts. For each selected roadway ID, the pavement sections were checked to see whether there is any section with performance data available for curve development. Following this procedure, about 20 to 30 pavement sections were selected from the resurfacing project of Primary system for each district. About 10 sections were selected from the resurfacing project of Interstate system for each district (except District 6).

Following the same procedure, 32 sections were selected from reconstruction projects, and 18 sections were selected from new construction projects for seven districts. Although the sample size is not statistically significant, the results can still serve the purpose of providing an indication of pavement performance life for FDOT management personnel.

Most M&R activities done in the past were resurfacing projects. Representative samples were obtained for resurfacing projects in terms of network level analysis. It has been suggested that 2 to 5 percent of the sample size is needed for network analysis purpose (Shahin 1994). There were total of 1344 rdwyid in the present condition survey database. Pavement sections from 140 rdwyid (11 percent of 1344) were selected for final curve development. Overall, 279 pavement sections out of total 7,000 sections (4%) were selected for the final curve development.

3.4.5 Model Development

The methodology for developing pavement performance models consists of fitting the selected models to the observed pavement condition data for each pavement section and subsequently establishing equations for predicting the parameters of the model using regression analysis. The regression equations were function of pavement performance AGE. Variable AGE is the most significant factor for predicting PCR because it is a common factor in the estimation of both cumulative traffic loads and environmental loads over the life-cycle period (George et al. 1989).

In developing the performance prediction models, it is important to choose a function that obeys the proscribed boundary conditions for the variable being predicted (PCR). For this study, the models developed should predict the trend in PCR with time. Since this rating is defined on a 0 to 10 scale, the models adopted must obey these minimum and maximum boundaries. Thus, the performance trend may initially start out horizontally, bounded from above by a rating of 10, with time, the pavement condition rating decreased, and asymptotes to a minimum value of 0. These boundary conditions suggest the use of a non-linear, polynomial curve for modeling pavement performance. A suitable function that follows this shape is:

$$PCR = a_0 + a_1 X + a_2 X^2 + a_3 X^3 \quad (3.1)$$

where:

PCR = pavement condition rating

X = pavement age in years

a_0, a_1, a_2, a_3 = regression parameters.

Figure 3.4 illustrates the curve defined by Eq. (3.1). It gives general trend of pavement performance with time.

A total of two hundred and seventy nine (279) pavement sections from the surveyed pavement network was selected for curve fitting using Microsoft Excel spreadsheet program. The relevant data for each section, such as PCR, AGE, rdwyid, beg, end, lanes, and rdwyside, were extracted for curve development. A best-fit curve applies to each data set of 279 selected pavement sections using a constrained least squares method. This curve is constrained in that it is not allowed to have a positive slope since the PCR cannot increase within one life-cycle period. The final performance prediction models were based on about 3000 pavement surface condition data records collected on the entire pavement system between 1976 and 1994. Because the reliability of data obtained from 1986 to 1994 is expected to be much better than that for the data collected before 1986, the curves used for predicting future PCR were based on the condition data collected from 1986 to 1993 (FDOT, 1996). The final

regression equations used in determining the pavement performance lives are provided in Table 3.6. These curves could predict or describe the change of PCR. The actual life of various pavement types was evaluated based on these curves.

3.4.6 Evaluation of Performance Model

The developed curves for 279 pavement sections were further classified into three groups:

1. Group I includes 78 pavement sections. The life cycle chosen from each pavement section for curve development in this group showed that the pavement rehabilitation were done after they became deficient ($PCR = 6.4$). The real lives of these pavement sections are shorter than the number of years that pavements were in service. Therefore, the real lives for the pavement sections in this group can be determined directly from regression curves.
2. Group II has 53 pavement sections. From this group the life cycle selected for curve development indicated that the rehabilitation were done before they became deficient where $PCR = 6.4$. The real lives of pavement sections in this group should be longer than that shown in life cycle. The real lives of these pavement sections were obtained by projecting the regression curves to a certain point where the PCR value is 6.4.

3. Group III with 148 pavement sections are different from groups I, & II. The life cycles extracted for curve development are last performance cycles. These pavement sections have not been rehabilitated yet since last rehabilitation and their last values of PCR are greater than 6.4. This means that the real lives of pavement sections in group III have longer values than that given in life cycle data. The curves developed in this group were used to predict the performance lives of pavement sections.

In most regression analyses, the fit of the model is described by a multiple coefficient of determination called R-squared (R^2). The R^2 value is based on sample correlation coefficients that indicate the strength of the developed relationship between the response variable (PCR) and the independent variable (AGE) when compared to the observed data. R^2 is a statistic parameter that tells how well the model fits the data points and thereby represents a measure of the useful of the model. R^2 may then be interpreted as the proportion of total variability in the dependent variable that can be explained by the independent variables. The R^2 can range from zero to one with the higher number indicating a better fit of the model to the actual data. The performance curves from Equation (3.1) model developed for 279 pavement sections are statistically significant with R^2

>0.5 (only three curves are exception). The R-squared values are also summarized in Table 3.6.

As a further verification of the model, comparisons were made between the measured PCR data and the predicted PCR data for all of the PCR data in the analyzed data base. The detailed SAS output from these comparisons are given in Appendix D by highway system and project type within Groups I, II, and III. For each subgroup, the predicted PCR data were regressed against the measured PCR data. The results from these comparisons are summarized in Table 3.7 which provides an overall summary of the accuracy of the model. The plots of predicted versus measured PCR are presented in Figures 3.5 to 3.16. The residuals, differences between the values from model equations and observed PCR values, were normally distributed.

Considering all data points in the PCR database, the root-mean-square errors (RMSEs) and the mean absolute errors between the observed values and the predictions are all within 0.51 rating points except for new construction in Group I (0.76). In fact, the mean absolute errors, considering all data points, are within 0.53 rating points. These statistics indicate that polynomial curve fitted the observed PCR performance trends quite well. The RMSE statistics are generally higher than the mean absolute errors because of the significant effect of squaring the differences between the observed values and the predictions. For this

reason, the mean absolute errors provide a fairer assessment of the accuracy of the predictions than the root-mean-square errors.

It is also important to know how well the model can fit data that are not included in the analyzed data set. A study was conducted for resurfacing project to determine how accurate the model predicting pavement conditions for 1994 as compared to the conditions measured in 1994 by regressing the predicted PCR against the measured PCR for one hundred and forty seven sections. It is noted that the curve fitting was accomplished using data for 1993 and earlier years, and the 1994 ratings were predicted by extrapolating the fitted curve for each pavement section to 1994. The results show that RMSE is 0.33 rating points and the mean absolute error is 0.28 points. The output of SAS program is also given in Appendix D. A plot of predicted PCR versus measured PCR for 1994 conditions is shown in Figure 3.17.

Table 3.1 Sample Illustration of Pavement Condition Survey Data
File Name PCSNEW SD2

Table 3.2 Distribution of Pavement Performance Condition Data

District \ System	Primary	Toll	Interstate	Turnpike	Total(%)
District 1	17182	32	1119	95	18428(13.9%)
District 2	22846	422	3669	0	27297(20.5%)
District 3	14487	39	1850	0	16376(12.3%)
District 4	18122	57	2433	1364	21998(16.5%)
District 5	18456	1572	2978	1646	24656(18.5%)
District 6	10129	330	444	680	11583(8.7%)
District 7	10530	690	1438	0	12658(9.5%)
Total	111752	3142	13931	3785	132996(100%)

Table 3.3 Distribution of Surveyed Pavement Segments

District \ System	Primary	Toll	Interstate	Turnpike	Total
District 1	935	14	98	5	1052
District 2	1047	41	150	0	1238
District 3	932	12	99	0	1043
District 4	916	6	106	153	1181
District 5	1066	59	115	148	1388
District 6	404	13	17	67	501
District 7	557	26	84	0	667
Total	5857	171	669	373	7070

Table 3.4 Sample Illustration of Work Program Administration Data
File Name WPASV502.SD2

WPITEMNO	LOCALNAM	WPWKMMX	CONTYDOT	BEGSECPT	ENDSECPT	PROJLGHX	EXLNIMPR	NEWLNADD	RDWYID
0150303	RESURF & ADD MED FAV	0225	97	15.384	25.184	9.800	0	0	92471000
1110040	OR 45	0102	01	13.400	13.700	0.300	2	0	01010000
1110041	SR 45	0102	01	12.000	14.200	2.200	2	0	01010000
1110048	SR 45	0215	01	13.900	14.200	0.300	2	0	01010000
1110050	SR 775	0215	01	0.000	9.200	9.200	2	0	01060000
1110052	SR 45	0213	01	11.300	11.800	0.500	2	2	01010000
1110058	SR 45	0214	01	18.100	18.300	0.200	4	0	01010000
1110063	SR 45	0101	01	0.000	6.600	6.600	2	0	01010000
1110069	SR 45	0213	01	14.200	15.700	1.500	2	2	01010000
1110072	SR 39	0101	01	0.000	1.100	1.100	0	2	01070000
1110078	SR 45	0121	01	7.700	11.200	3.500	2	2	01010000
1110079	SR 35 MARION	0102	01	0.000	0.200	0.200	2	0	01040000
1110093	SR 35	0102	01	0.000	3.700	2.623	2	4	01040000
1110094	SR 775	0547	01	9.800	10.300	0.500	2	0	01060000
1110095	SR 45	0215	01	15.400	17.300	1.900	4	0	01010000
1110121	TAMAMI TRAIL	0215	01	17.291	22.290	4.909	4	0	01010000
RDWYSIDE	RDSECTTY	PRDSCTTY	DISTRICT	WPPHASE	FISCALYR	PGMNO	MAXCONTR	EXTRDATE	
C	0	2	0	40	1991	6540	989651	19951215	
C	3	3	1	40	1978	3069	372823	19951215	
C	3	3	1	40	1981	3069	271928	19951215	
C	3	3	1	40	1977	3040	6501	19951215	
C	1	1	1	40	1979	3069	1818385	19951215	
C	4	4	1	40	1980	3069	998979	19951215	
C	4	4	1	40	1975	3071	18539	19951215	
C	1	1	1	40	1976	3069	2621808	19951215	
C	4	4	1	40	1975	3036	9088633	19951215	
C	1	1	1	40	1982	3069	959362	19951215	
C	2	2	1	40	1980	3069	3833325	19951215	
C	3	3	1	40	1978	3069	56514	19951215	
C	4	4	1	40	1981	3091	4414733	19951215	
C	2	2	1	40	1982	3048	228785	19951215	
C	4	4	1	40	1982	3041	455657	19951215	
C	4	4	1	40	1986	3041	1338968	19951215	

Table 3.5 Distribution of WPASV502.SD2 Data File
Total Records = 3755

Project Type	New Construction	Reconstruction	Resurfacing	Other
No. of Records	276 (7.3%)	744 (19.7%)	2514 (66.7%)	221(6.4%)

Table 3.6 Results of Curve Fitting Equations for Pavement Performance

Curve No.	Equation	R ²	Curve No.	Equation	R ²
1	$y = -0.0008x^3 + 0.0156x^2 - 0.1145x + 8.5031$	0.71	24	$y = -0.0031x^3 + 0.0919x^2 - 0.9108x + 10.975$	0.85
2	$y = -0.0021x^3 + 0.0699x^2 - 0.7242x + 10.613$	0.74	25	$y = -0.0017x^3 + 0.0267x^2 - 0.1874x + 8.5295$	0.93
3	$y = -0.0005x^3 - 0.0273x^2 + 0.1612x + 8.5951$	0.96	26	$y = -0.0021x^3 + 0.0459x^2 - 0.4965x + 9.2217$	0.90
4	$y = -0.0018x^3 + 0.006x^2 - 0.0927x + 9.1134$	0.96	27	$y = -0.0018x^3 + 0.0245x^2 - 0.1475x + 7.6361$	0.42
5	$y = 0.0262x^3 - 0.1382x^2 + 0.1577x + 8.845$	0.99	28	$y = 0.0024x^3 - 0.1362x^2 + 0.6118x + 8.0097$	0.89
6	$y = -0.0106x^3 + 0.1295x^2 - 0.5208x + 9.4759$	0.68	29	$y = -0.002x^3 + 0.0383x^2 - 0.2743x + 8.5107$	0.51
7	$y = -0.0053x^3 + 0.0146x^2 - 0.0807x + 8.6629$	1.00	30	$y = -0.0022x^3 + 0.0474x^2 - 0.4002x + 9.1332$	0.80
8	$y = -0.0036x^3 + 0.0572x^2 - 0.3248x + 9.3$	0.91	31	$y = -0.0034x^3 + 0.0298x^2 - 0.2283x + 9.3253$	0.92
9	$y = -0.0091x^3 + 0.1565x^2 - 0.8114x + 9.7697$	0.96	32	$y = -0.0833x^3 + 0.7143x^2 - 2.2024x + 10.6$	0.97
10	$y = -0.1333x^3 + 1.2286x^2 - 3.5381x + 11.88$	0.89	33	$y = -0.0034x^3 + 0.0617x^2 - 0.383x + 8.8579$	0.81
11	$y = -0.003x^3 + 0.0661x^2 - 0.5073x + 9.356$	1.00	34	$y = -0.0017x^3 + 0.0072x^2 - 0.019x + 8.8613$	0.95
12	$y = -0.004x^3 + 0.0677x^2 - 0.4637x + 8.7677$	0.97	35	$y = 0.0001x^3 - 0.0302x^2 + 0.0577x + 8.926$	0.95
13	$y = 0.0005x^3 - 0.0186x^2 + 0.0126x + 8.8836$	0.83	36	$y = -0.024x^3 + 0.3174x^2 - 1.3701x + 10.042$	0.95
14	$y = -0.0017x^3 + 0.0224x^2 - 0.0934x + 9.1011$	0.94	37	$y = -0.025x^3 + 0.3282x^2 - 1.3819x + 9.9392$	0.95
15	$y = -0.0056x^3 + 0.0464x^2 - 0.1909x + 8.7857$	0.83	38	$y = -0.0045x^3 + 0.095x^2 - 0.8399x + 10.368$	0.85
16	$y = -0.0137x^3 + 0.1009x^2 - 0.1901x + 8.3746$	0.91	39	$y = -0.012x^3 + 0.1712x^2 - 0.862x + 9.6781$	0.94
17	$y = -0.0009x^3 + 0.0131x^2 - 0.0661x + 8.2221$	0.74	40	$y = -0.0021x^3 + 0.0385x^2 - 0.3523x + 8.9937$	0.65
18	$y = -0.0017x^3 + 0.0258x^2 - 0.1173x + 8.1766$	0.87	41	$y = -0.0015x^3 + 0.0479x^2 - 0.5149x + 9.6745$	0.65
19	$y = -0.0137x^3 + 0.1973x^2 - 0.9348x + 9.5751$	0.89	42	$y = -0.0076x^3 + 0.1035x^2 - 0.5318x + 9.0071$	0.90
20	$y = -0.0113x^3 + 0.0885x^2 - 0.2373x + 8.8036$	0.77	43	$y = -0.0032x^3 + 0.0858x^2 - 0.7819x + 10.013$	0.60
21	$y = -0.0089x^3 + 0.2029x^2 - 1.4977x + 10.915$	0.88	44	$y = -0.0136x^3 + 0.1703x^2 - 0.8359x + 9.3529$	0.96
22	$y = -0.0046x^3 + 0.0683x^2 - 0.3493x + 7.7979$	0.92	45	$y = -0.0006x^3 - 0.0161x^2 - 0.0406x + 8.5009$	0.94
23	$y = -0.0018x^3 + 0.001x^2 + 0.1069x + 8.4572$	0.77	46	$y = -0.0109x^3 + 0.1472x^2 - 0.6753x + 9.1071$	0.92

Table 3.6--continued

Curve No.	Equation	R ²	Curve No.	Equation	R ²
47	$y = -0.0028x^3 - 0.0039x^2 + 0.0571x + 8.6993$	0.87	70	$y = -0.0023x^3 + 0.0585x^2 - 0.4919x + 9.1968$	0.78
48	$y = -0.0089x^3 + 0.1286x^2 - 0.6102x + 8.835$	0.84	71	$y = -0.0061x^3 + 0.0934x^2 - 0.4165x + 8.7452$	0.76
49	$y = -0.0009x^3 + 0.0039x^2 - 0.0432x + 7.6456$	0.92	72	$y = -0.0015x^3 + 0.0178x^2 - 0.0255x + 8.5998$	0.76
50	$y = -0.0015x^3 + 0.0398x^2 - 0.2556x + 8.0826$	0.76	73	$y = -0.004x^3 + 0.0906x^2 - 0.6446x + 9.4392$	0.84
51	$y = -0.0037x^3 + 0.0425x^2 - 0.2396x + 8.5333$	0.86	74	$y = -0.0096x^3 + 0.1486x^2 - 0.7942x + 9.2643$	0.99
52	$y = 0.0028x^3 - 0.0763x^2 + 0.2777x + 7.7672$	0.88	75	$y = 0.0002x^3 - 0.0353x^2 + 0.2677x + 8.165$	0.86
53	$y = -0.0036x^3 - 0.0141x^2 + 0.0652x + 7.9143$	0.72	76	$y = 0.0002x^3 - 0.0315x^2 + 0.2191x + 8.3259$	0.87
54	$y = -0.0139x^3 + 0.144x^2 - 0.6587x + 9.4286$	0.89	77	$y = -0.0059x^3 + 0.1307x^2 - 0.9177x + 10.432$	0.92
55	$y = -0.0124x^3 + 0.1165x^2 - 0.3545x + 8.6429$	0.95	78	$y = -0.0055x^3 + 0.0628x^2 - 0.1965x + 8.5398$	0.98
56	$y = -0.0192x^3 + 0.3157x^2 - 1.7102x + 10.247$	0.89	79	$y = -0.0041x^3 + 0.0946x^2 - 0.7589x + 10.707$	0.88
57	$y = -0.0096x^3 + 0.1522x^2 - 0.8115x + 9.6775$	0.86	80	$y = -0.0078x^3 + 0.133x^2 - 0.8012x + 9.6956$	0.99
58	$y = -0.0057x^3 + 0.1196x^2 - 0.8439x + 10.608$	0.84	81	$y = 0.0385x^3 - 0.2276x^2 + 0.3415x + 8.4503$	1.00
59	$y = 0.0019x^3 - 0.0438x^2 + 0.164x + 8.1755$	0.95	82	$y = -0.0037x^3 + 0.0317x^2 - 0.2503x + 9.3333$	0.59
60	$y = -0.0058x^3 + 0.096x^2 - 0.5729x + 8.724$	0.83	83	$y = -0.0083x^3 + 0.0655x^2 - 0.1333x + 8.3143$	0.53
61	$y = -0.0038x^3 - 0.034x^2 + 0.2341x + 8.4643$	0.85	84	$y = -0.0131x^3 + 0.1892x^2 - 0.9667x + 9.1286$	0.74
62	$y = -0.0005x^3 + 0.0192x^2 - 0.3987x + 10.087$	0.91	85	$y = 0.0003x^3 - 0.0204x^2 + 0.1167x + 8.0831$	0.86
63	$y = 0.0004x^3 - 0.0241x^2 + 0.1276x + 8.4476$	0.71	86	$y = -0.005x^3 + 0.095x^2 - 0.6428x + 9.994$	0.97
64	$y = -0.0015x^3 + 0.0461x^2 - 0.558x + 10.193$	0.89	87	$y = -0.0013x^3 + 0.0122x^2 - 0.1175x + 8.8581$	0.81
65	$y = -0.0064x^3 + 0.1308x^2 - 0.9142x + 8.8607$	0.68	88	$y = -0.0203x^3 + 0.2411x^2 - 0.9681x + 9.782$	0.94
66	$y = -0.0037x^3 + 0.0734x^2 - 0.5361x + 9.3645$	0.92	89	$y = -0.0081x^3 + 0.0206x^2 - 0.3309x + 9.4214$	0.98
67	$y = -0.0005x^3 + 0.0123x^2 - 0.2631x + 9.7168$	0.79	90	$y = -0.0072x^3 + 0.1371x^2 - 0.8725x + 9.9169$	0.97
68	$y = -0.0061x^3 + 0.0773x^2 - 0.3639x + 9.6161$	0.81	91	$y = -0.0037x^3 + 0.075x^2 - 0.5727x + 9.5729$	0.90
69	$y = -0.0062x^3 - 0.1774x + 9.5857$	0.92	92	$y = -0.0075x^3 + 0.1444x^2 - 0.9277x + 10.04$	0.97

Table 3.6--continued

Curve No.	Equation	R ²	Curve No.	Equation	R ²
93	y = 0.0025x ³ - 0.00818x ² + 0.5361x + 7.8414	0.91	116	y = -0.028x ³ + 0.5195x ² - 3.2279x + 13.398	0.91
94	y = -0.0271x ³ + 0.3741x ² - 1.7031x + 11.351	0.97	117	y = -0.0037x ³ + 0.0427x ² - 0.2273x + 8.7171	0.88
95	y = -0.0015x ³ + 0.0557x ² - 0.7542x + 10.55	0.97	118	y = -0.0037x ³ + 0.0427x ² - 0.2273x + 8.717	0.88
96	y = -0.054x ³ + 0.4474x ² - 1.0913x + 7.7337	0.53	119	y = -0.0002x ³ + 0.001172 - 0.0864x + 8.6573	0.84
97	y = -0.0304x ² + 0.1116x + 8.86664	0.94	120	y = 1E-05x ³ - 0.0072x ² + 0.0521x + 8.5343	0.78
98	y = 0.0007x ³ - 0.0434x ² + 0.1785x + 8.7883	0.94	121	y = -0.0072x ³ + 0.0989x ² - 0.6237x + 9.5093	0.96
99	y = -0.0221x ³ + 0.2492x ² - 1.0372x + 10.294	0.98	122	y = 0.0012x ² - 0.2202x + 9.2714	0.92
100	y = -0.0295x ³ + 0.4515x ² - 2.0699x + 10.623	0.97	123	y = -0.001x ³ + 0.0158x ² - 0.1731x + 9.1	0.91
101	y = -0.0028x ³ + 0.0535x ² - 0.4172x + 9.4781	0.92	124	y = -0.0021x ³ + 0.0459x ² - 0.3244x + 8.7167	0.84
102	y = -0.0003x ³ - 0.0038x ² - 0.0892x + 8.9317	0.55	125	y = -0.0004x ³ - 0.031x ² + 0.3153x + 7.7	0.95
103	y = -0.0145x ³ + 0.1568x ² - 0.7604x + 9.7391	0.90	126	y = -0.0014x ³ - 0.0026x ² + 0.0815x + 8.6289	0.97
104	y = -0.0034x ³ + 0.0765x ² - 0.5694x + 9.4004	0.96	127	y = 0.001x ³ - 0.0474x ² + 0.228x + 8.0218	0.98
105	y = -0.0047x ³ + 0.0879x ² - 0.4859x + 9.6854	0.88	128	y = -0.0025x ³ + 0.0518x ² - 0.4053x + 9.3071	0.80
106	y = -0.0022x ³ + 0.0388x ² - 0.2153x + 9.1211	0.92	129	y = -0.0037x ³ + 0.0284x ² - 0.165x + 9.2687	0.85
107	y = -0.0008x ³ + 0.0267x ² - 0.3772x + 9.5079	0.81	130	y = -0.0043x ³ + 0.0668x ² - 0.4388x + 9.5487	0.86
108	y = -0.0098x ³ + 0.1605x ² - 0.8868x + 9.9452	0.58	131	y = -0.0227x ³ + 0.2259x ² - 1.0133x + 9.9071	0.95
109	y = 0.0028x ³ - 0.0512x ² - 0.0897x + 9.0286	0.88	132	y = -0.0139x ³ + 0.1369x ² - 0.8492x + 9.8929	0.95
110	y = 0.0046x ³ - 0.0575x ² - 0.205x + 9.3333	0.94	133	y = -0.0129x ³ + 0.0602x ² - 0.1222x + 8.3643	0.95
111	y = -0.0069x ³ + 0.127x ² - 0.8586x + 10.508	0.81	134	y = 0.0028x ³ - 0.1089x ² + 0.6618x + 7.5154	0.88
112	y = 0.044x ³ - 0.0796x ² - 0.7464x + 10.723	0.97	135	y = -0.0099x ³ + 0.2193x ² - 1.5049x + 10.252	0.85
113	y = -0.0076x ³ + 0.0844x ² - 0.558x + 9.7857	0.89	136	y = -0.0076x ³ + 0.1418x ² - 0.8188x + 9.3144	0.92
114	y = -0.0444x ³ + 0.7552x ² - 4.0621x + 13.135	0.92	137	y = -0.004x ³ + 0.0869x ² - 0.6514x + 8.6903	0.71
115	y = -0.036x ³ + 0.54x ² - 2.5026x + 10.783	0.93	138	y = -0.0057x ³ + 0.0473x ² - 0.1441x + 8.1814	0.95

Table 3.6--continued

Curve No.	Equation	R ²	Curve No.	Equation	R ²
139	y = -0.002x ³ + 0.0439x ² - 0.4007x + 9.2942	0.90	162	y = -0.0014x ³ + 0.0281x ² - 0.2029x + 8.8556	0.80
140	y = -0.0152x ³ + 0.1756x ² - 0.6724x + 9.4585	0.98	163	y = -0.0584x ² + 0.2844x + 7.7619	0.81
141	y = -0.0059x ³ + 0.0959x ² - 0.5583x + 9.7777	0.91	164	y = -0.005x ³ + 0.0828x ² - 0.4231x + 9.334	0.92
142	y = 0.0025x ³ - 0.065x ² + 0.2861x + 7.8701	0.96	165	y = -0.0007x ³ + 0.0033x ² - 0.0698x + 8.2374	0.92
143	y = 0.0004x ³ - 0.0359x ² + 0.2453x + 7.9558	0.92	166	y = -0.0023x ³ + 0.0321x ² - 0.2415x + 9.2242	0.84
144	y = -0.0016x ³ + 0.0326x ² - 0.188x + 7.9129	0.34	167	y = -0.0023x ³ + 0.0361x ² - 0.3117x + 9.055	0.87
145	y = -0.0101x ³ + 0.1114x ² - 0.4976x + 8.8857	0.87	168	y = 0.0008x ³ - 0.0775x ² + 0.3265x + 8.7714	0.91
146	y = -0.0178x ³ + 0.2687x ² - 1.3992x + 10.371	0.46	169	y = -0.0022x ³ + 0.0564x ² - 0.5954x + 9.7369	0.77
147	y = -0.0044x ³ + 0.0866x ² - 0.5696x + 8.9726	0.86	170	y = -0.0005x ³ - 0.0048x ² + 0.063x + 7.9175	0.93
148	y = 0.0006x ³ - 0.0182x ² + 0.0258x + 8.2869	0.94	171	y = -0.0021x ³ + 0.0522x ² - 0.4446x + 9.1484	0.89
149	y = -0.0079x ³ + 0.1608x ² - 1.0415x + 10.763	0.83	172	y = -0.0049x ³ + 0.0474x ² - 0.2382x + 9.0341	0.88
150	y = -0.0009x ³ + 0.0244x ² - 0.2376x + 9.2821	0.96	173	y = -0.0024x ³ + 0.0487x ² - 0.3921x + 9.3059	0.92
151	y = -0.0019x ³ + 0.0376x ² - 0.2981x + 8.8473	0.78	174	y = -0.0044x ³ + 0.0714x ² - 0.4393x + 8.7924	0.58
152	y = -0.0036x ³ + 0.0764x ² - 0.6811x + 9.3789	0.71	175	y = -0.0231x ³ + 0.1091x ² - 0.9392x + 8.8333	0.94
153	y = -0.0001x ³ + 0.0066x ² - 0.3237x + 9.2328	0.89	176	y = -0.0012x ³ + 0.0166x ² - 0.1952x + 9.1573	0.89
154	y = -0.0007x ³ + 0.0117x ² - 0.0636x + 8.0392	0.74	177	y = -0.0148x ² + 0.0499x + 7.9305	0.83
155	y = -0.0033x ³ + 0.0684x ² - 0.4747x + 9.4189	0.88	178	y = -0.006x ² + 0.0112x + 8.5902	0.86
156	y = -0.004x ³ + 0.0878x ² - 0.6325x + 9.7921	0.89	179	y = -0.0018x ³ + 0.0446x ² - 0.4104x + 9.0903	0.97
157	y = -0.0049x ³ + 0.1224x ² - 0.9892x + 9.8152	0.92	180	y = -0.0029x ³ + 0.06x ² - 0.5152x + 9.3416	0.92
158	y = -0.0032x ³ + 0.0682x ² - 0.4889x + 9.1224	0.83	181	y = -0.0009x ³ + 0.0358x ² - 0.4959x + 9.3906	0.76
159	y = -0.0013x ³ - 0.0062x ² + 0.2753x + 7.3272	0.93	182	y = -0.0121x ³ + 0.2116x ² - 1.1441x + 9.8647	0.88
160	y = -0.0236x ³ + 0.2255x ² - 0.7863x + 9.0929	0.96	183	y = -0.0029x ³ + 0.0813x ² - 0.723x + 10.595	0.71
161	y = -0.0043x ³ + 0.0753x ² - 0.3955x + 8.092	0.62	184	y = -0.0002x ³ - 0.0047x ² + 0.0157x + 8.7145	0.69

Table 3.6--continued

Curve No.	Equation	R ²	Curve No.	Equation	R ²
185	y = -0.0043x ³ + 0.0553x ² - 0.2578x + 8.3116	0.99	208	y = -0.0023x ³ + 0.0513x ² - 0.5026x + 8.9638	0.81
186	y = -1E-04x ³ - 0.0107x ² - 0.0546x + 8.15	0.90	209	y = -0.0208x ³ + 0.225x ² - 0.8292x + 9.325	1.00
187	y = -0.0083x ³ + 0.075x ² - 0.3167x + 9.24	0.95	210	y = -0.006x ² + 0.0314x + 8.8028	0.91
188	y = -0.1021x ² + 0.6056x + 7.9262	0.85	211	y = -0.0038x ³ + 0.057x ² - 0.2789x + 9.4666	0.97
189	y = -0.0032x ³ + 0.0794x ² - 0.7082x + 10.63	0.96	212	y = -0.0033x ³ + 0.018x ² - 0.1291x + 8.8821	0.94
190	y = -0.0089x ³ + 0.1444x ² - 0.7573x + 8.7739	0.76	213	y = 0.0123x ³ - 0.2122x ² + 0.3565x + 8.1817	0.91
191	y = 0.0028x ³ - 0.1001x ² + 0.746x + 7.2889	0.86	214	y = -0.0027x ³ + 0.05x ² - 0.3104x + 8.3585	0.66
192	y = 0.001x ³ - 0.0293x ² + 0.1294x + 7.4559	0.91	215	y = -0.0037x ³ + 0.0805x ² - 0.6068x + 9.5324	0.74
193	y = -0.0016x ³ + 0.0424x ² - 0.3906x + 8.2657	0.93	216	y = -0.0026x ³ + 0.0564x ² - 0.3988x + 9.4541	0.77
194	y = -0.0005x ³ - 7E-05x ² - 0.1208x + 8.842	0.97	217	y = -0.0061x ³ + 0.0652x ² - 0.3739x + 8.8198	0.87
195	y = -0.002x ³ + 0.0346x ² - 0.2268x + 9.1732	0.75	218	y = -0.0167x ³ + 0.2226x ² - 0.9179x + 9.2	0.88
196	y = -0.0306x ³ + 0.3619x ² - 1.3218x + 9.4	0.98	219	y = -0.0031x ³ + 0.0499x ² - 0.3191x + 7.3331	0.86
197	y = 0.002x ³ - 0.0407x ² - 0.1105x + 9.1762	0.94	220	y = -0.0007x ³ + 0.0033x ² - 0.0659x + 8.0836	0.97
198	y = -0.0033x ³ + 0.0382x ² - 0.1733x + 8.2903	0.89	221	y = -0.0024x ³ + 0.0373x ² - 0.2043x + 9.0069	0.77
199	y = -0.0024x ³ + 0.0636x ² - 0.5329x + 9.1194	0.63	222	y = -0.0016x ³ + 0.0333x ² - 0.3111x + 9.1857	0.86
200	y = -0.0008x ³ + 0.0092x ² - 0.1611x + 8.6861	0.77	223	y = -0.0117x ³ + 0.2041x ² - 1.0722x + 9.9341	0.88
201	y = -0.0019x ³ + 0.0132x ² - 0.0154x + 8.8127	0.90	224	y = -0.0037x ³ + 0.084x ² - 0.6519x + 9.9468	0.71
202	y = -0.01x ³ + 0.1493x ² - 0.7716x + 9.113	0.83	225	y = -0.0035x ³ + 0.0936x ² - 0.8106x + 9.8396	0.58
203	y = -0.0028x ³ + 0.0517x ² - 0.3947x + 9.2455	0.89	226	y = 0.0011x ³ - 0.0452x ² + 0.1953x + 8.4807	0.94
204	y = -0.0164x ³ + 0.0615x ² - 0.0126x + 8.6557	0.82	227	y = -0.0039x ³ + 0.0856x ² - 0.5561x + 9.1292	0.58
205	y = -0.0016x ³ + 0.0132x ² + 0.0249x + 8.207	0.64	228	y = -0.0049x ³ + 0.0695x ² - 0.3879x + 8.5357	0.93
206	y = -0.0028x ³ + 0.0684x ² - 0.5202x + 8.8653	0.62	229	y = -0.0006x ³ + 0.0084x ² - 0.0327x + 7.0295	0.67
207	y = 0.0009x ³ - 0.0338x ² + 0.0954x + 7.9031	0.88	230	y = -0.0022x ³ - 0.0012x ² - 0.027x + 8.9429	0.88

Table 3.6--continued

Curve No.	Equation	R ²	Curve No.	Equation	R ²
231	y = -0.0083x ³ + 0.1333x ² - 0.7291x + 9.3561	0.85	256	y = -0.0013x ³ + 0.0241x ² - 0.1541x + 8.3271	0.99
232	y = -0.001x ³ + 0.0222x ² - 0.1843x + 8.2307	0.59	257	y = -0.0029x ³ + 0.0557x ² - 0.3791x + 9.4171	0.90
233	y = -0.0051x ³ + 0.1011x ² - 0.6594x + 9.0182	0.84	258	y = -0.0117x ³ + 0.1894x ² - 1.0914x + 9.8025	0.89
234	y = -0.0087x ³ + 0.1768x ² - 1.123x + 9.6391	0.98	259	y = -0.0003x ³ + 0.0028x ² - 0.0161x + 8.0246	0.84
235	y = -0.0015x ³ + 0.0352x ² - 0.2794x + 8.7598	0.90	260	y = -0.0006x ³ + 0.0117x ² - 0.1623x + 8.7785	0.80
236	y = -0.0016x ³ + 0.0021x ² + 0.035x + 7.9127	0.71	261	y = -0.0389x ³ + 0.2226x ² - 0.6671x + 9.0857	0.98
237	y = -0.0101x ³ + 0.1726x ² - 1.0065x + 9.85	0.98	262	y = -0.0097x ³ + 0.1386x ² - 0.9986x + 9.1204	0.98
238	y = -0.0031x ³ + 0.0515x ² - 0.367x + 9.8176	0.94	263	y = -0.0051x ³ + 0.1093x ² - 0.7313x + 8.1923	0.60
239	y = -0.0021x ³ + 0.0237x ² - 0.2303x + 9.2136	0.87	264	y = -0.0076x ³ + 0.0623x ² - 0.0421x + 7.8947	0.94
240	y = -0.0059x ³ + 0.1254x ² - 0.8061x + 10.103	0.94	265	y = -0.0021x ³ + 0.008x ² - 0.1045x + 8.6335	0.88
241	y = -0.0017x ³ + 0.0452x ² - 0.4048x + 9.5039	0.72	266	y = -0.0292x ³ + 0.325x ² - 1.2708x + 9.975	1.00
242	y = -0.0285x ³ + 0.4013x ² - 1.8273x + 11.25	0.82	267	y = -0.0222x ³ + 0.381x ² - 2.073x + 11.543	0.92
243	y = -0.0076x ³ + 0.1187x ² - 0.6036x + 9.4777	0.91	268	y = -0.0033x ³ + 0.0679x ² - 0.5058x + 9.3108	0.76
244	y = 0.0022x ³ - 0.0332x ² - 0.1165x + 8.6267	0.94	269	y = -0.0037x ³ + 0.0803x ² - 0.5371x + 9.6529	0.81
245	y = -0.0014x ³ + 0.0216x ² - 0.2415x + 9.0168	1.00	270	y = -0.0032x ³ + 0.0605x ² - 0.4077x + 9.3958	0.76
246	y = -0.0022x ³ + 0.0495x ² - 0.3752x + 8.9425	0.99	271	y = -0.125x ³ + 1.1964x ² - 3.6786x + 11.6	1.00
247	y = 2E-16x ³ - 0.019x ² - 0.0048x + 8.7857	0.81	272	y = -0.0833x ³ + 0.7367x ² - 2.181x + 10.48	0.84
248	y = -0.0081x ³ + 0.1244x ² - 0.6368x + 9.6015	0.80	273	y = -0.0083x ³ + 0.15x ² - 0.9845x + 10.3	0.94
249	y = 0.0071x ² - 0.3357x + 9.7429	0.95	274	y = -0.0083x ³ + 0.0679x ² - 0.2238x + 8.76	0.98
250	y = -0.0017x ³ + 0.0387x ² - 0.2894x + 8.7303	0.82	275	y = -0.0017x ³ + 0.0223x ² - 0.3866x + 9.3267	0.93
251	y = -0.0069x ³ + 0.1359x ² - 0.871x + 9.603	0.81	276	y = -0.0417x ³ + 0.5083x ² - 1.8786x + 10.371	0.88
252	y = -0.0032x ³ + 0.0403x ² - 0.2308x + 8.1348	0.82	277	y = -0.0048x ³ + 0.0662x ² - 0.3517x + 9.3626	0.92
253	y = -0.0014x ³ + 0.0434x ² - 0.4364x + 9.4441	0.90	278	y = -0.0227x ³ + 0.2116x ² - 0.599x + 8.6071	0.90
254	y = -0.0063x ³ + 0.1067x ² - 0.6165x + 9.9049	0.74	279	y = -0.0013x ³ + 0.0298x ² - 0.2946x + 9.123	0.91
255	y = -0.0077x ³ + 0.1503x ² - 0.9817x + 10.16	0.84			

Table 3.7 Accuracy of Prediction from Polynomial Curve Fitting

Highway System	Group	R-Squared	RMSE	Mean Absolute Deviation
Primary (Resurfacing)	I	0.90	0.51	0.38
	II	0.81	0.29	0.20
	III	0.70	0.29	0.20
Interstate (Resurfacing)	I	0.91	0.51	0.39
	II	0.68	0.33	0.24
	III	0.70	0.29	0.20
New Construction	I	0.87	0.76	0.53
	II	0.92	0.16	0.11
	III	0.74	0.23	0.21
Reconstruction	I	0.93	0.43	0.41
	II	0.87	0.33	0.22
	III	0.87	0.20	0.20
1994 points only (Resurfacing)		0.72	0.33	0.28

Figure 3.1 Distribution of FDOT Districts

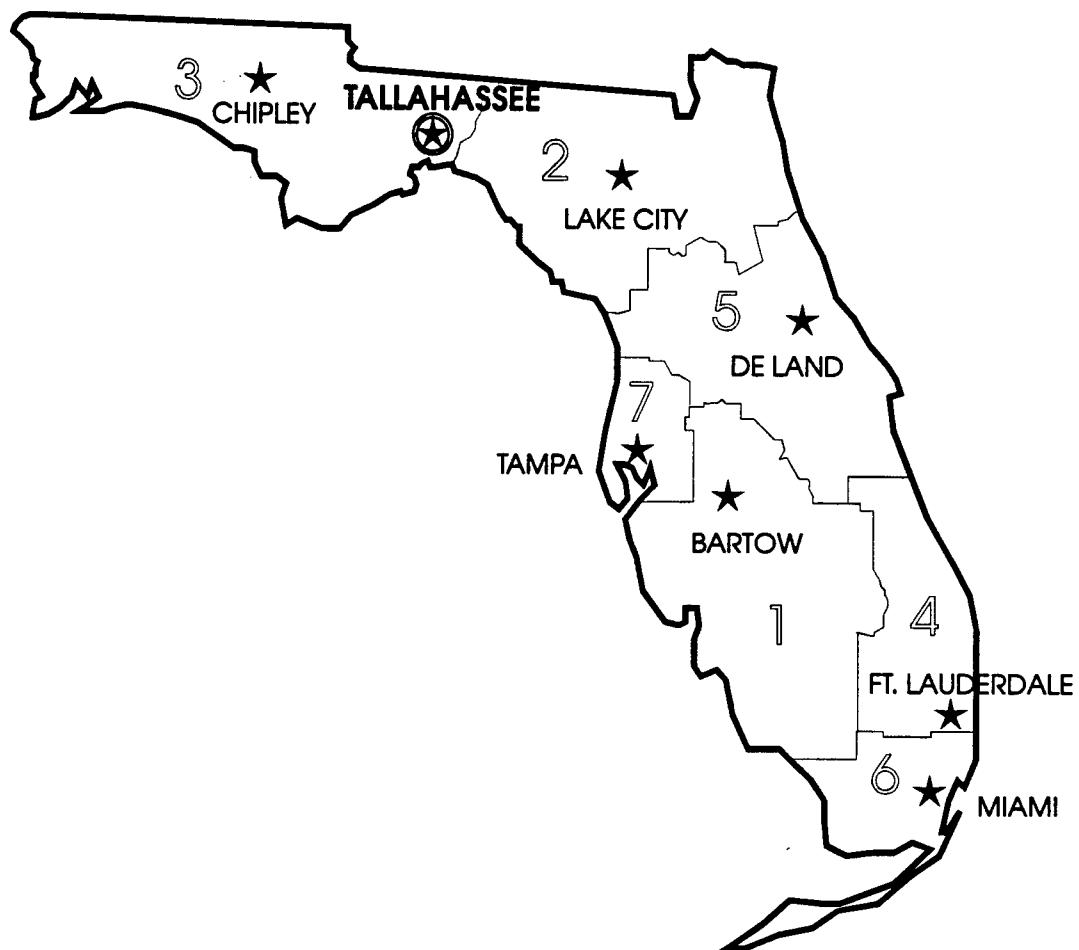


Figure 3.2 Typical Plot of Pavement Performance Condition Data
RDWYID=29180000 RDWYSIDE=L
BEG=14.797, END=16.954

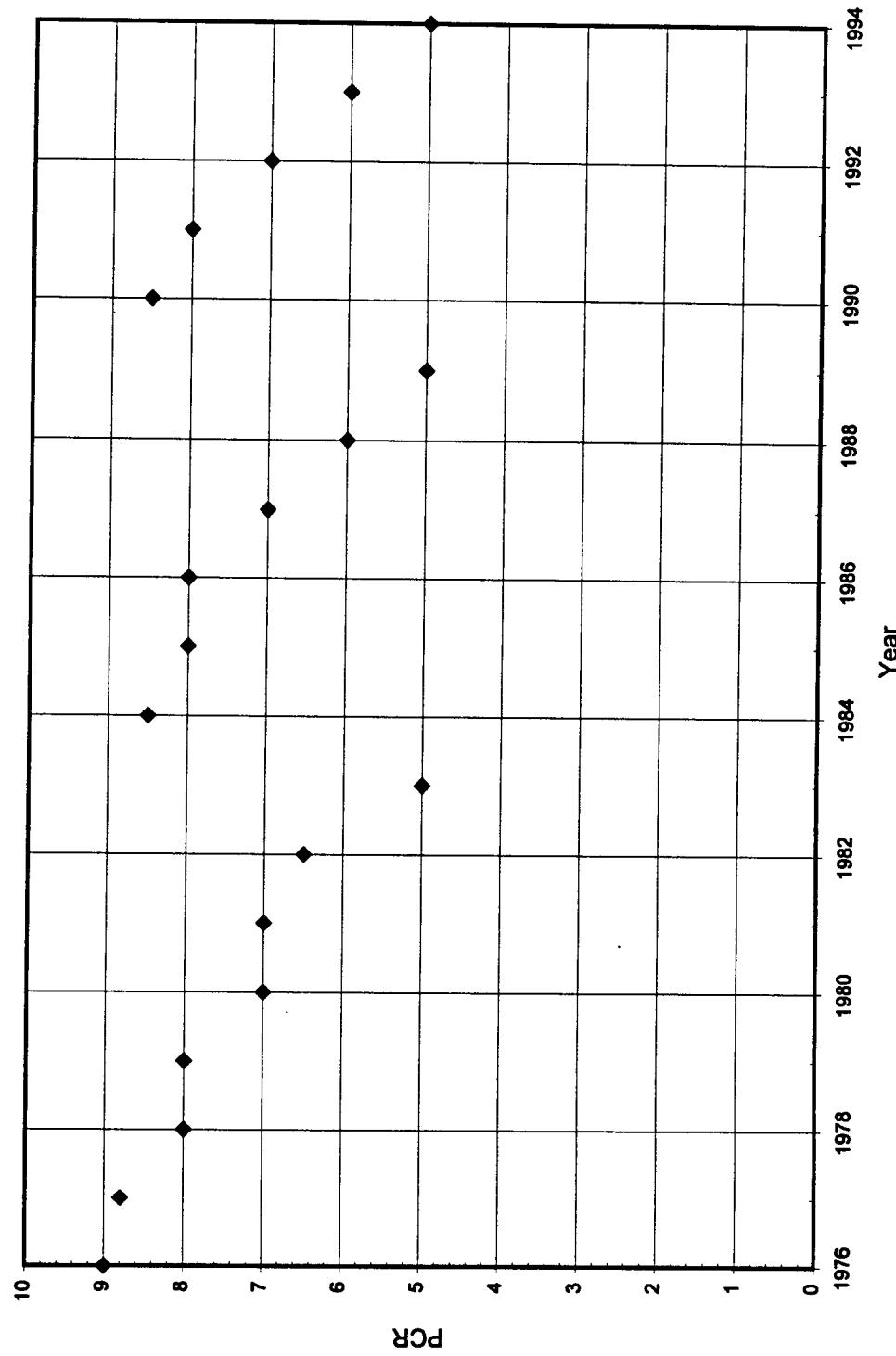


Figure 3.3 Data Manipulation Process

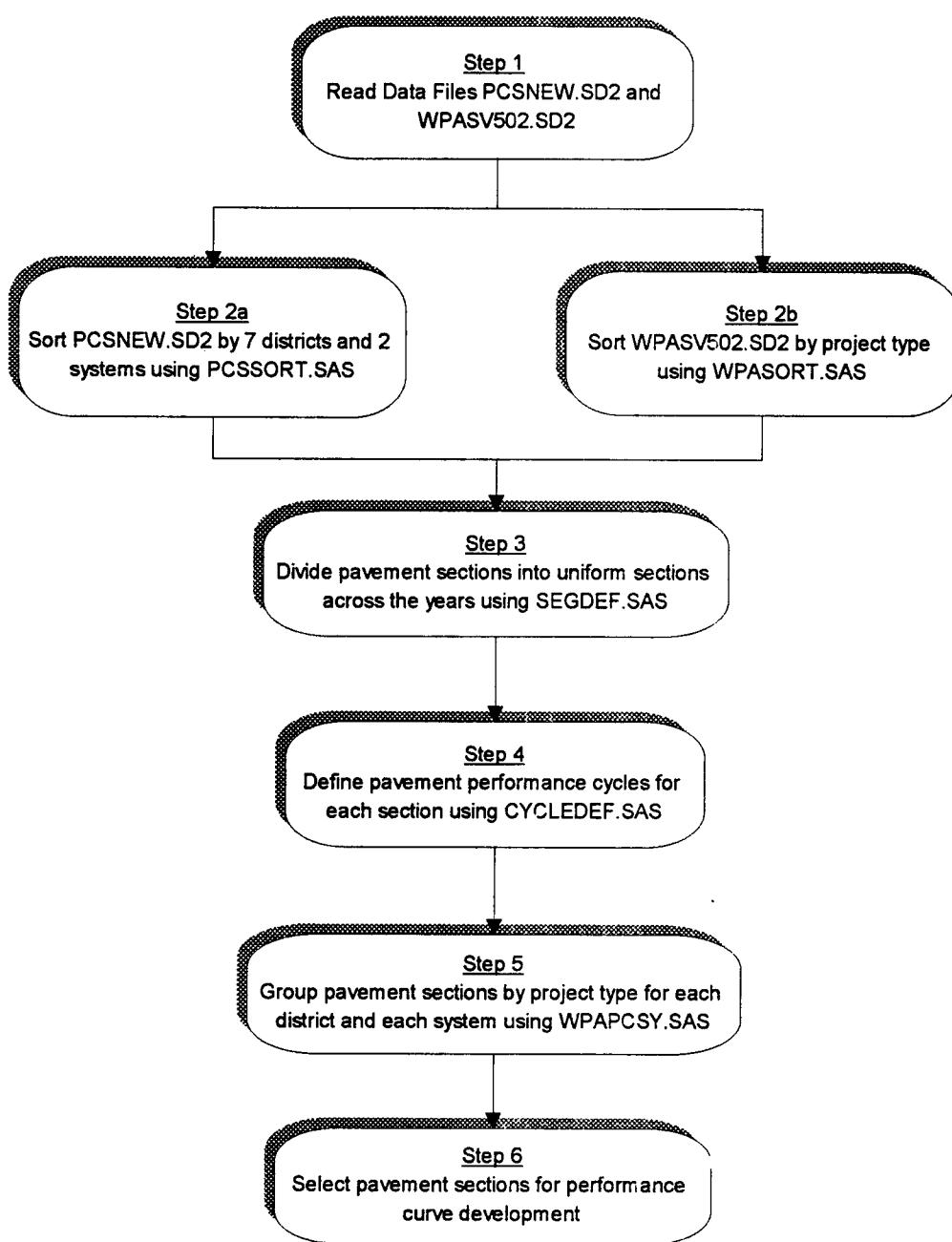


Figure 3.4 Constrained Third Degree Polynomial Curve
 $PCR = -0.0101 * Age^3 + 0.1726 * Age^2 - 1.0065 * Age + 9.85$

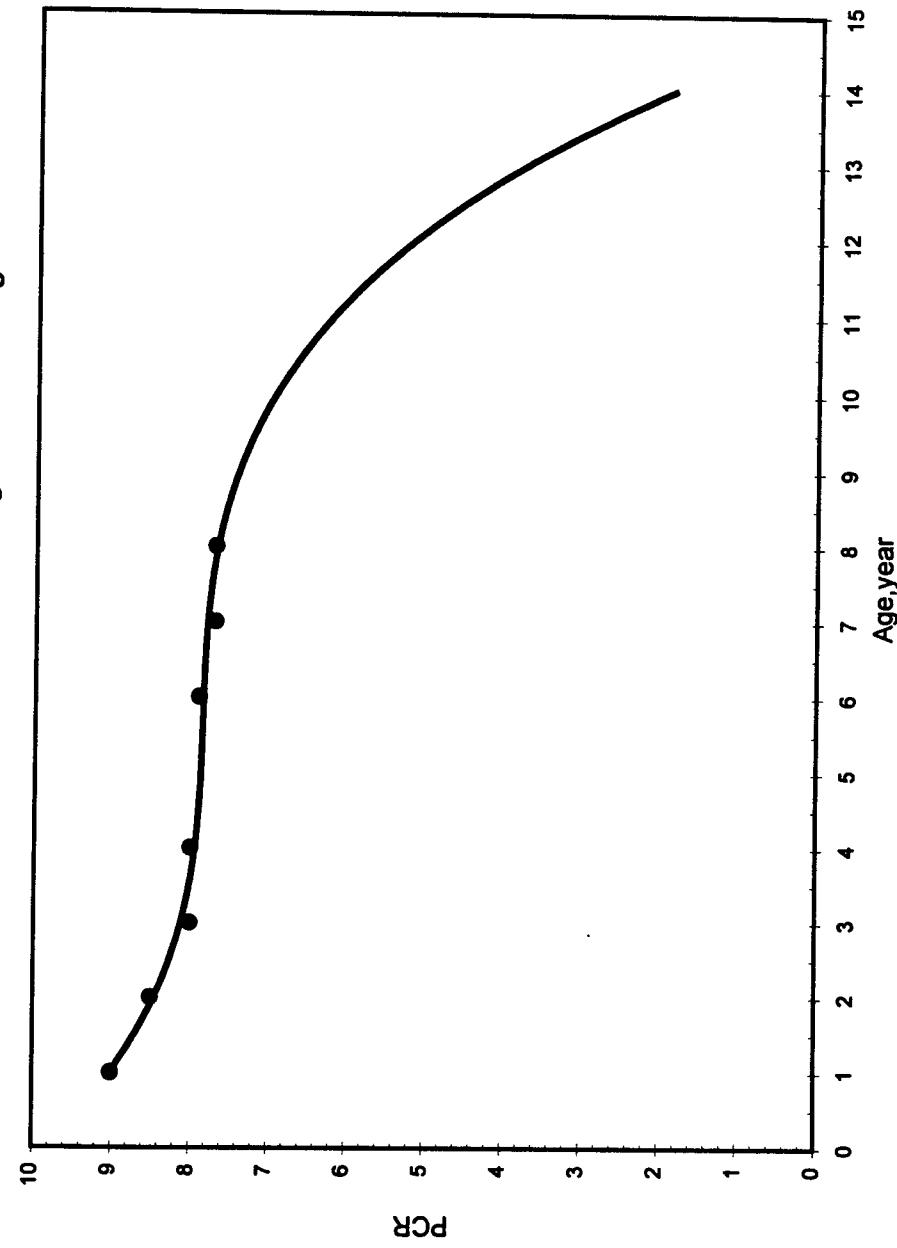


Figure 3.5 PCR from Regression Equation versus Measured PCR
Primary System, Resurfacing Project, Group I

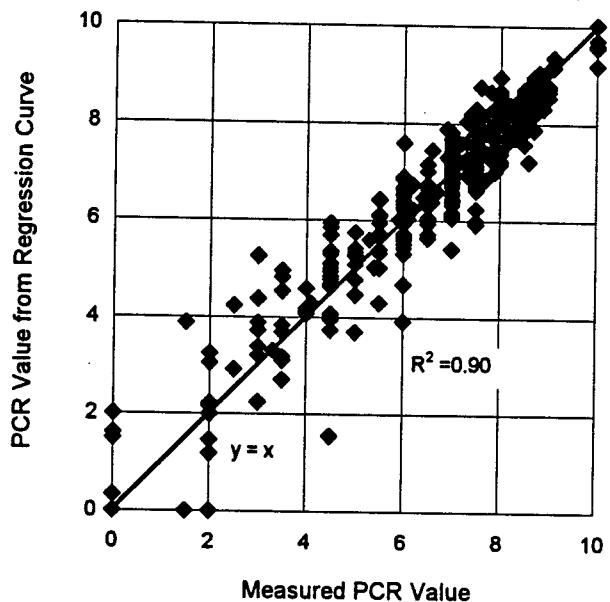


Figure 3.6 PCR from Regression Equation versus Measured PCR
Interstate System, Resurfacing Project, Group I

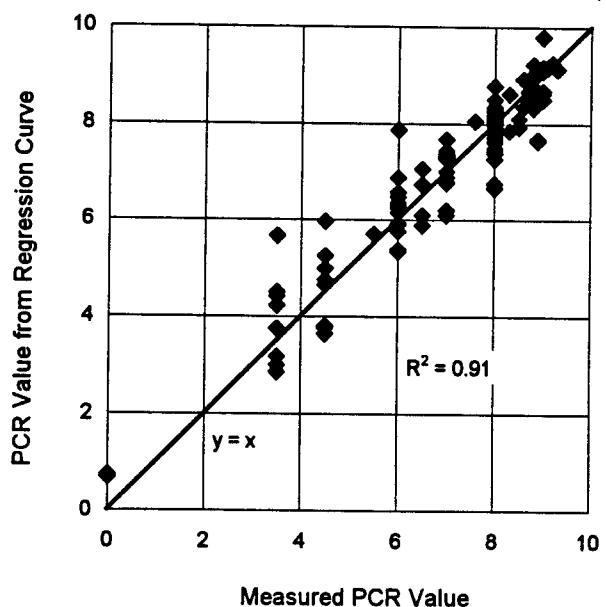


Figure 3.7 PCR from Regression Equation versus Measured PCR
New Construction, Group I

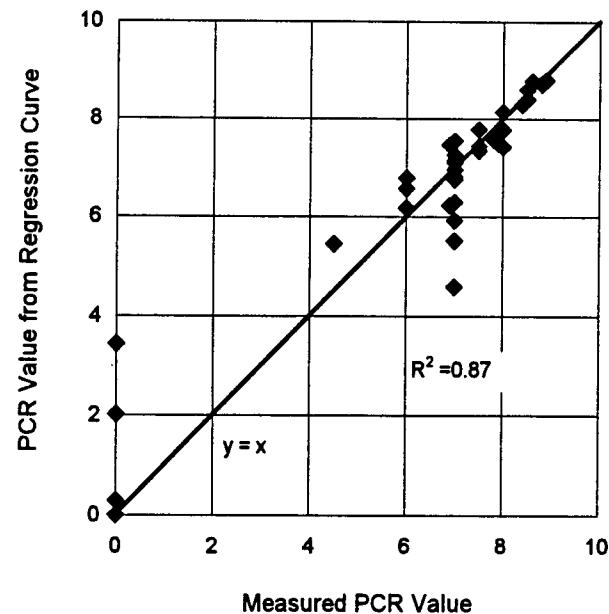


Figure 3.8 PCR from Regression Equation versus Measured PCR
Reconstruction Project, Group I

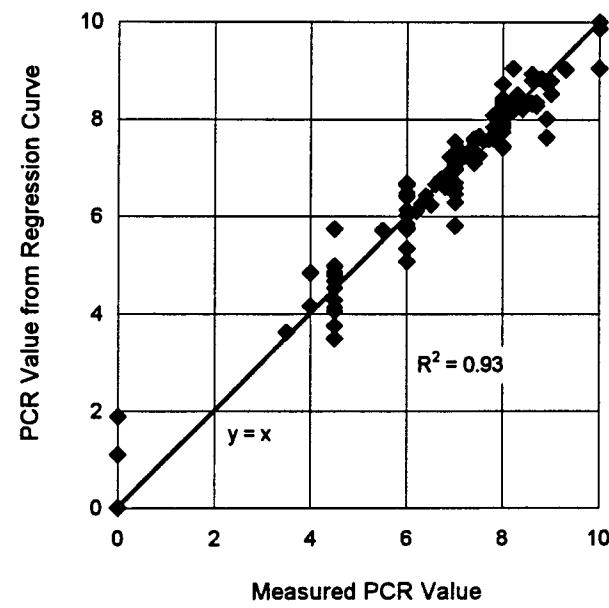


Figure 3.9 PCR from Regression Equation versus Measured PCR
Primary System, Resurfacing Project, Group II

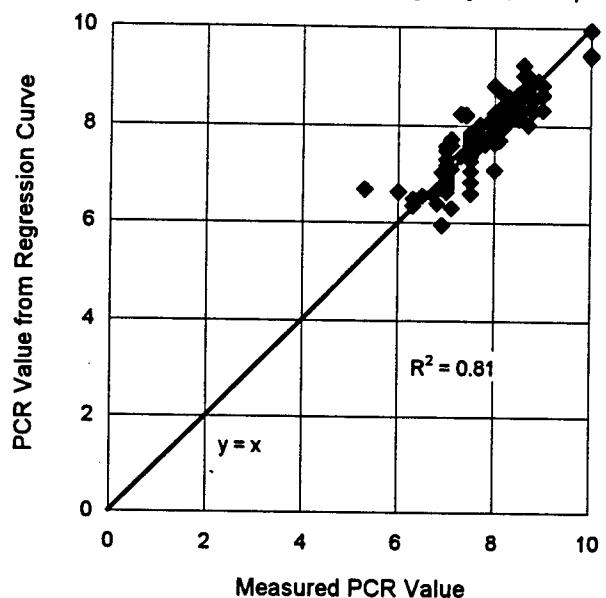


Figure 3.10 PCR from Regression Equation versus Measured PCR
Interstate System, Resurfacing Project, Group II

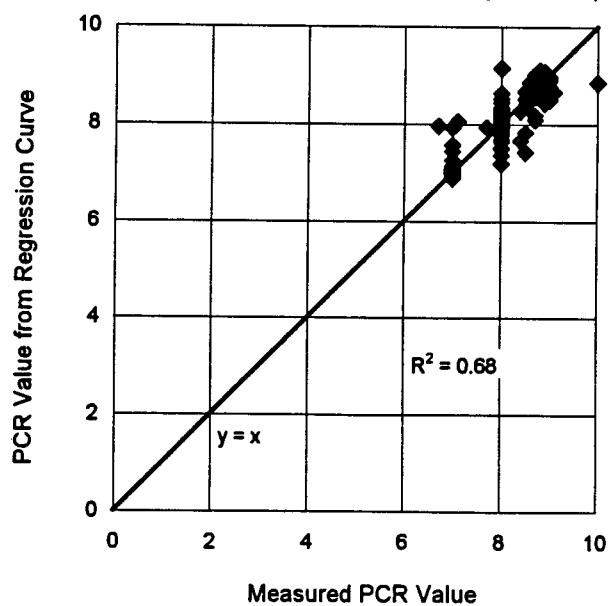


Figure 3.11 PCR from Regression Equation versus Measured PCR
New Construction, Group II

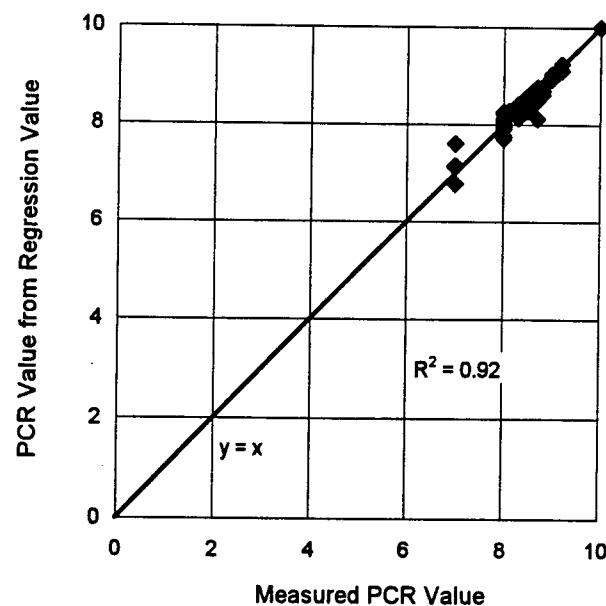


Figure 3.12 PCR from Regression Equation versus Measured PCR
Reconstruction Project, Group II

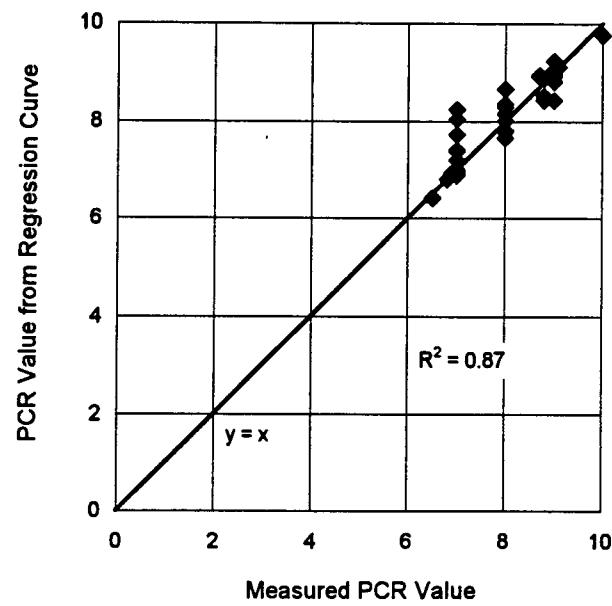


Figure 3.13 PCR from Regression Equation versus Measured PCR
Primary System, Resurfacing Project, Group III

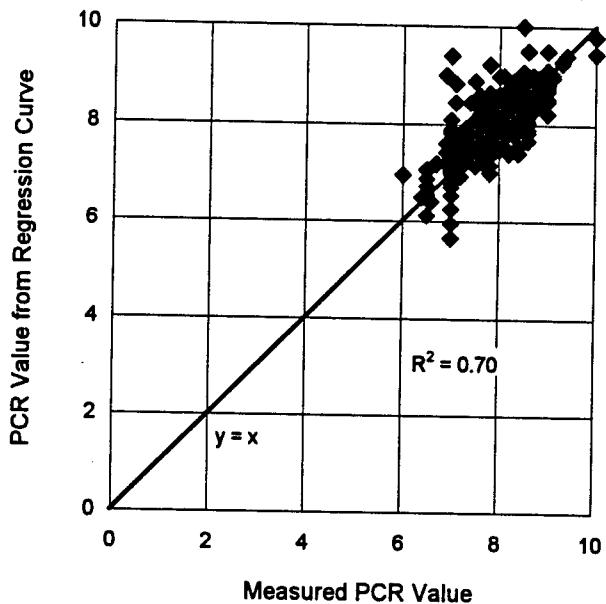


Figure 3.14 PCR from Regression Equation versus Measured PCR
Interstate System, Resurfacing Project, Group III

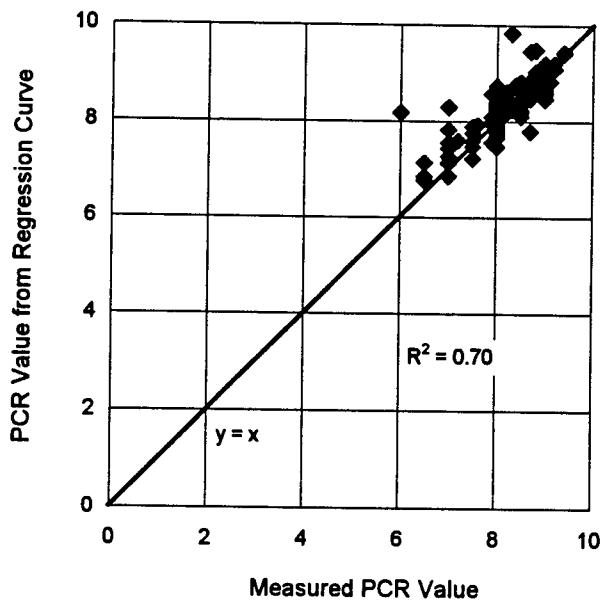


Figure 3.15 PCR from Regression Equation versus Measured PCR
New Construction Project, Group III

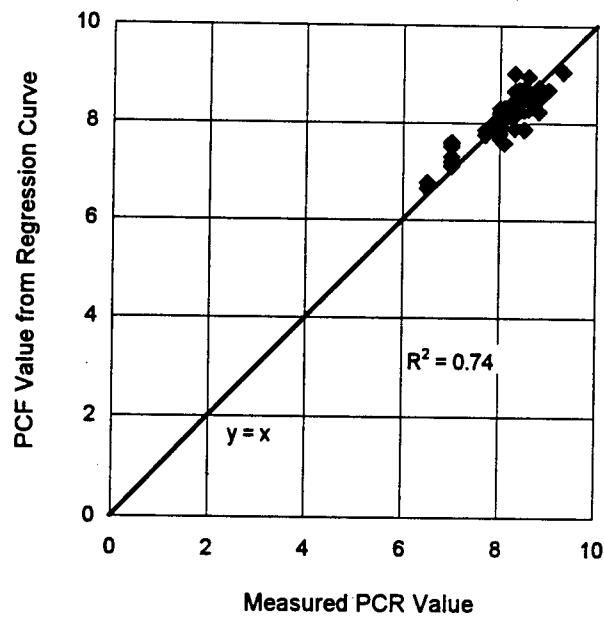


Figure 3.16 PCR from Regression Equation versus Measured PCR
Reconstruction Project, Group III

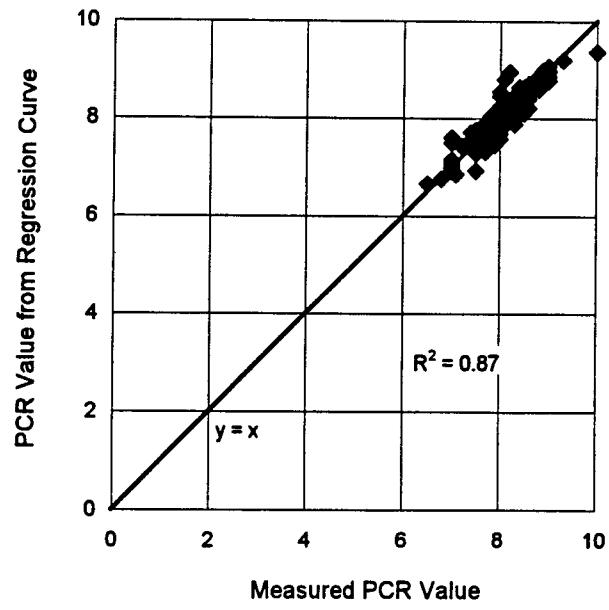
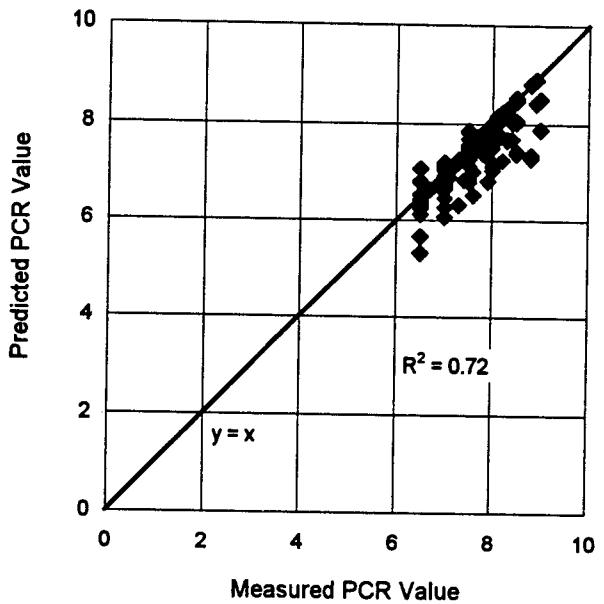


Figure 3.17 Predicted PCR versus Measured PCR
1994 Points, Resurfacing Project



CHAPTER 4

EVALUATION OF PAVEMENT PERFORMANCE LIFE

4.1 Pavement Performance Life

One application of the 279 pavement performance curves is to evaluate how long pavements would last by specific functional classification, project type, and geographical region. The use of the model for making inferences can be divided into two categories. The first is the use of the model for estimating the value of AGE for a specific value of PCR for each pavement section in Group I. The second use of the model entails predicting AGE for a given PCR for each pavement section in Groups II and III. The way to estimate the pavement performance life from the pavement performance curve is to select the point where the PCR value is 6.4, the corresponding time span is the value of pavement life for that pavement section. Following this procedure the life value for each pavement section was determined from the corresponding performance curve.

4.2 Summary of Pavement Performance Life

Results of the pavement life estimates are listed in Tables 4.1 through 4.6 for the selected pavement sections of the primary and interstate highway systems. A summary of the results is presented in Table 4.7. The pavement performance results are also illustrated in Figures 4.1 and 4.2. As shown in the figures, average performance lives of 13.0 and 10.5 years were obtained for the primary and interstate resurfacing projects, respectively. For reconstruction projects, average lives of 14.9 and 10.5 years were obtained for the primary and interstate systems, respectively. For new construction, the primary system has a performance life of 14.7 years whereas the interstate has a life value of 11.7 years. In general, the primary system has longer average performance life than the interstate system for resurfacing, reconstruction, and new construction projects. Nevertheless, it should be emphasized that the traffic patterns and volumes may be totally different for these two systems.

For the three project types considered in this study, the average performance life of resurfacing projects is the lowest among these project types, as illustrated in Figures 4.1 and 4.2. In addition, the average pavement performance lives of resurfacing projects are compared for individual interstate highways. The results are summarized in Table 4.8, and illustrated in Figure 4.3. The average performance

life of the interstate system is about 10 to 11 years before resurfacing as shown in the figure.

Although the environmental factors, traffic conditions, material properties, and quality control can vary from project to project, it is of interest to compare the pavement performance life of resurfacing projects by district (region). The results are summarized in Table 4.9, and presented in Figures 4.4 and 4.5 for the resurfacing projects of the primary and interstate systems, respectively. In general, the pavement performance lives of the primary system are within a couple of years difference among seven regional districts. The average value of pavement performance lives is about 13.0 years for the resurfacing projects of the primary system. For the interstate system, however, the range of pavement performance lives varies from 9 years (District 1) to 13 years (District 5). Again, it should be noted that many factors may have attributed to the difference, such as the sample size, traffic conditions, environmental factors, materials properties, etc.

4.3 Evaluation of Results

Among the total of 7203 segments included in the pavement condition survey database, 279 pavement segments (about 4 percent) were selected to analyze the performance life of flexible pavement system. Distributions of pavement ages for 279 sections are summarized in Tables 4.10 and 4.11.

Bar charts are also constructed for the distribution of pavement ages in Figures 4.6 through 4.11. As can be seen from Figure 4.6, the ages for most sections are ranged from 7 to 17 years, although the distribution is skewed toward middle-aged pavements.

The selected pavement data files were grouped together for the primary and interstate systems in each defined category, i.e., resurfacing, reconstruction, and new construction. Polynomial regression analysis was performed for each category of pavement performance. The results are shown in Figures 4.12 through 4.17. The polynomial regression curves are not allowed to have a positive slope since the PCR can not increase with age within one life cycle. To predict the pavement performance life, the point at which the $\text{PCR} = 6.4$ is selected from the curves, and the corresponding age value is the value of pavement life. Following this procedure, the values of pavement performance life are established for the primary and interstate systems in the categories of resurfacing, reconstruction, and new construction. The results are listed below:

Pavement Performance Life, Year				
	Primary		Interstate	
	Predicted	W. Average	Predicted	W. Average
Resurfacing	14.9	13.0	14.7	10.5
Reconstruction	14.3	14.9	9.6	10.5
New Construction	15.0	14.7	14.8	11.7

Note: W. Average = Weighted Average value from individual curve development.

In general, the predicted values from the family curves of pavement performance are higher than those obtained from the weighted average procedures.

4.4 Discussion

A typical pavement deterioration curve depicts the pavement performance life cycles as consisting of two phases (Johnson 1983): the slow deterioration phase and sharp deterioration phase. Taking a pavement segment as an example shown in Figure 4.18, during the first stage which is denoted as "slow deterioration phase" a 35.4 percent deterioration of pavement condition gradually occurs during 77.1 percent of the life of the pavement. A sharp decrease in condition occurs during the second phase. An equivalent 35.4 percent drop in condition takes place during 14.5 percent of the life of the pavement. Pavement maintenance and rehabilitation costs at this point may be higher than those at the end of

the first phase. If pavement repairs are taken up while the pavement is in the first phase instead of deferring them until the decline to a poor condition, life cycle cost may be reduced. The following table shows the pavement age and corresponding PCR for the pavement section curve shown in Figure 4.18.

<u>Age (years)</u>	<u>PCR</u>
0.0	9.9
13.8	6.4
16.4	2.9
17.9	0.0

It is significant to note that seventy eight (78) pavement sections (28 percent of 279 sections) were found to be maintained or rehabilitated during the second phase of pavement performance curve.

**Table 4.1 Pavement Performance Life
Primary System, Resurfacing Project**

CURVE #	RDWYID	RDWYSIDE	LANES	BEG	END	LANE-MILE	AGE
1	03010000	C	2	29.505	30.127	1.244	13.6
2	03010000	C	2	36.873	37.455	1.164	12.4
3	04040000	C	2	15.486	16.928	2.884	15.5
4	07060000	C	2	15.176	15.786	1.220	11.3
5	10110000	R	2	12.613	16.447	7.668	12.7
6	11010000	C	2	0.000	1.035	2.070	15.3
7	11040000	L	3	4.543	5.814	3.813	17.8
8	11040000	R	3	6.038	7.060	3.066	14.2
9	11100000	R	2	2.247	3.794	3.094	11.5
10	11130000	C	2	2.701	4.810	4.218	11.6
11	11200000	L	2	4.234	5.134	1.800	7.0
12	12010000	L	2	0.000	1.023	2.046	14.7
13	12010000	R	2	1.727	4.321	5.188	14.9
14	13020000	L	3	3.560	4.581	3.063	13.8
15	13030000	L	3	4.740	5.402	1.986	12.5
16	13060000	C	2	15.003	19.268	8.530	10.4
17	13080000	C	2	0.000	4.007	8.014	12.0
18	13150000	R	2	5.068	6.578	3.020	9.8
19	13150000	C	4	6.579	7.090	2.044	12.8
20	14030000	L	2	3.037	4.190	2.306	10.1
21	14040000	C	2	0.000	1.263	2.526	15.9
22	14050000	C	3	0.000	3.237	9.711	8.1
23	15009000	C	3	1.907	2.570	1.989	10.1
24	15020000	C	2	0.000	1.115	2.230	16.2
25	15030000	L	2	1.556	3.148	3.184	10.5
26	15050000	C	3	2.870	3.934	3.192	8.3
27	15060000	R	2	5.800	6.283	0.966	7.1
28	15080000	C	2	0.203	0.754	1.102	7.9
29	15090000	L	2	7.212	8.715	3.006	8.5
30	15100000	L	2	1.000	1.800	1.600	9.0
31	15120000	R	2	1.192	2.530	2.676	11.0
32	15220000	L	2	0.501	1.198	1.394	13.2
33	15230000	L	2	0.600	1.968	2.736	10.9
34	16060000	L	2	6.884	9.764	5.760	7.8
35	16070000	C	2	8.614	14.120	11.012	17.0
36	16090000	C	2	12.700	17.987	10.574	14.7
37	16110000	R	2	3.147	5.300	4.306	9.4
38	16110000	L	2	25.594	27.175	3.162	13.5
39	16110000	L	3	0.000	1.601	4.803	17.8
40	16160000	C	2	2.707	6.100	6.786	16.8
41	16180000	L	2	27.790	30.015	4.450	11.1
42	16250000	C	2	4.550	5.986	2.872	12.6
43	16250000	C	2	25.438	26.125	1.374	17.3

Table 4.1—continued

CURVE #	RDWYID	RDWYSIDE	LANES	BEG	END	LANE-MILE	AGE
44	16280000	C	2	4.600	5.056	0.912	12.3
45	16331000	L	2	0.000	0.898	1.796	10.3
46	17020000	L	2	4.389	5.248	1.718	14.8
47	17070000	C	2	14.029	20.537	13.016	15.5
48	17080000	C	2	0.110	2.562	4.904	9.0
49	17120000	R	2	0.564	1.130	1.132	8.7
50	18010000	C	2	7.511	9.437	3.852	14.5
51	18010000	C	2	24.370	25.680	2.620	13.4
52	18030000	C	2	0.047	2.156	4.218	13.3
53	18110000	C	2	14.427	16.727	4.600	8.6
54	18120000	R	2	0.000	1.016	2.032	6.0
55	26020000	L	2	24.218	25.220	2.004	9.1
56	26020000	R	2	24.218	25.220	2.004	13.3
57	26080000	C	2	5.050	11.362	12.624	17.3
58	26090000	C	2	2.990	7.651	9.322	13.7
59	27010000	C	2	10.088	11.900	3.624	14.1
60	28020000	C	2	0.000	5.200	10.400	15.3
61	30010000	R	2	1.880	2.755	1.750	8.5
62	30010000	L	2	2.769	3.419	1.300	8.6
63	34030000	C	2	0.169	8.224	16.110	18.4
64	34070000	C	2	3.376	9.303	11.854	20.9
65	36002000	L	2	0.277	4.910	9.266	15.7
66	36010000	R	2	22.997	23.783	1.572	16.6
67	36050000	C	2	0.000	3.718	7.436	11.9
68	36080000	C	2	8.205	9.345	2.280	10.4
69	46040000	L	2	1.120	4.072	5.904	6.7
70	46040000	R	2	25.525	31.028	11.006	9.6
71	46040000	R	2	31.200	31.890	1.380	12.5
72	46060000	C	2	9.320	11.955	5.270	12.5
73	47010000	C	2	12.558	13.498	1.880	13.6
74	47010000	C	2	20.918	21.399	0.962	9.2
75	47040000	C	2	9.777	15.596	11.638	15.0
76	48020000	C	2	0.351	7.626	14.550	9.1
77	48020000	R	2	7.726	9.805	4.158	12.4
78	48040000	L	2	1.956	2.900	1.888	11.4
79	48070000	L	2	0.378	1.984	3.212	12.1
80	49030000	C	2	0.000	5.139	10.278	14.9
81	50010000	C	2	1.012	1.829	1.634	13.2
82	50010000	L	2	16.530	18.470	3.880	17.2
83	50080000	C	2	0.000	11.438	22.876	13.6
84	50080000	C	2	13.643	14.707	2.128	21.7
85	52040000	C	2	1.900	11.166	18.532	15.1
86	53110000	C	2	8.527	9.800	2.546	10.7
87	55020000	L	2	1.277	3.340	4.126	18.6
88	56010000	C	2	1.673	4.223	5.100	14.2
89	56010000	C	2	9.400	12.497	6.194	14.9

Table 4.1--continued

CURVE #	RDWYID	RDWYSIDE	LANES	BEG	END	LANE-MILE	AGE
90	57060000	C	2	17.716	20.940	6.448	14.0
91	57110000	L	2	0.000	0.564	1.128	7.1
92	58060000	C	2	21.937	25.963	8.052	17.5
93	59040000	C	2	0.000	2.580	5.160	7.8
94	59110000	C	2	14.695	20.790	12.190	13.5
95	60030000	C	2	9.156	12.700	7.088	12.7
96	60080000	C	2	1.440	2.179	1.478	13.1
97	61080000	C	2	15.790	17.618	3.656	13.0
98	70020000	R	2	28.485	29.213	1.456	8.6
99	70030000	L	2	8.828	11.780	5.904	14.1
100	72040000	L	2	7.536	9.572	4.072	3.0
101	72150000	C	2	8.161	11.183	6.044	14.9
102	72190000	C	2	0.213	1.141	1.856	12.0
103	73050000	C	2	0.000	0.464	0.928	18.9
104	74070000	C	2	0.039	4.715	9.352	17.7
105	75060000	R	2	3.822	5.162	2.680	11.5
106	75080000	C	2	11.715	12.828	2.226	10.1
107	76010000	C	2	0.000	3.953	7.906	7.8
108	76010000	C	2	12.451	14.699	4.496	17.3
109	76010000	L	2	26.774	27.578	1.608	10.6
110	76020000	C	2	8.450	10.814	4.728	12.6
111	76040000	C	2	0.000	6.185	12.370	12.4
112	76050000	C	2	0.000	1.352	2.704	15.7
113	76050000	C	2	8.200	10.744	5.088	7.7
114	76060000	C	2	0.000	1.395	2.790	8.8
115	76110000	R	2	19.538	20.481	1.886	11.4
116	77010000	L	2	2.645	3.251	1.212	17.6
117	77010000	R	2	4.529	5.155	1.252	13.0
118	77010000	C	2	14.382	15.298	1.832	13.4
119	77080000	R	3	5.922	6.380	1.374	9.9
120	78010000	L	3	13.971	14.625	1.962	6.7
121	78030000	C	2	1.490	3.893	4.806	14.6
122	78040000	L	2	15.996	16.687	1.382	16.4
123	78050000	C	2	0.000	0.541	1.082	9.9
124	78050000	C	2	2.825	4.096	2.542	12.1
125	78070000	C	2	5.344	11.579	12.470	8.0
126	78090000	C	2	0.000	6.000	12.000	22.8
127	79030000	L	2	2.663	3.161	0.996	14.0
128	79030000	R	2	6.039	7.326	2.574	14.5
129	86010000	L	3	8.802	9.311	1.527	9.4
130	86014000	L	3	7.692	8.175	1.449	7.9
131	86015000	C	2	0.500	2.604	4.208	12.5
132	86020000	R	3	10.039	11.793	5.262	14.8
133	86020000	L	3	11.793	14.618	8.475	15.5
134	86100000	L	2	0.000	0.670	1.340	15.7
135	86120000	R	3	4.818	6.080	3.786	10.6

Table 4.1—continued

CURVE #	RDWYID	RDWYSIDE	LANES	BEG	END	LANE-MILE	AGE
136	87001000	R	2	0.000	2.405	4.810	9.2
137	87002000	L	2	0.294	2.520	4.452	11.1
138	87060000	C	2	3.932	4.514	1.164	17.6
139	87080000	C	4	0.000	0.648	2.592	12.9
140	87090000	C	4	13.690	14.795	4.420	12.2
141	87120000	R	3	0.000	2.002	6.006	18.0
142	87150000	C	2	2.633	3.556	1.846	11.0
143	87240000	R	3	1.742	2.230	1.464	10.8
144	88010000	R	2	20.126	22.088	3.924	13.8
145	88070000	C	2	17.329	22.245	9.832	11.7
146	89010000	R	3	18.880	19.409	1.587	9.1
147	89040000	C	2	0.000	0.528	1.056	11.8
148	89050000	C	2	4.749	7.048	4.598	13.4
149	89060000	R	2	24.620	25.357	1.474	13.1
150	89070000	C	2	14.691	15.400	1.418	16.4
151	90020000	C	3	19.581	20.418	2.511	11.1
152	90040000	C	2	6.546	8.988	4.884	11.5
153	91020000	C	2	15.449	17.057	3.216	14.3
154	91070000	C	2	0.340	3.085	5.490	17.5
155	92030000	R	2	9.789	10.505	1.432	12.6
156	92030000	L	2	11.273	12.548	2.550	10.6
157	92060000	C	2	0.250	1.568	2.636	21.1
158	93010000	R	2	2.869	4.977	4.216	16.7
159	93010000	L	2	5.897	6.829	1.864	15.1
160	93050000	C	4	3.812	5.741	7.716	9.6
161	93060000	C	2	0.000	0.970	1.940	20.1
162	93100000	R	2	6.103	11.904	11.602	17.2
163	93110000	C	2	19.355	22.865	7.020	5.0
164	93140000	C	2	13.888	19.350	10.924	4.9
165	93150000	R	3	0.000	1.756	5.268	11.8
166	93160000	C	2	0.144	5.515	10.742	9.7
167	93160000	C	2	12.145	15.100	5.910	9.9
168	93210000	C	2	13.793	19.514	11.442	7.5
169	93290000	C	2	0.000	2.097	4.194	14.6
170	94005000	L	2	1.769	2.474	1.410	9.0
171	94010000	R	2	10.599	12.743	4.288	12.0
172	94030000	C	2	3.871	4.341	0.940	7.5
173	94050000	C	2	1.504	2.450	1.892	16.9
						Weighted Average Life	13.0
						Mean	12.6
						Minimum	3.0
						Maximum	22.8

**Table 4.2 Pavement Performance Life
Primary System, Reconstruction Project**

CURVE #	RDWYID	RDWYSIDE	LANES	BEG	END	LANE-MILE	AGE
1	01010000	L	2	8.000	8.685	1.370	11.0
2	01010000	L	2	11.182	11.762	1.160	11.0
3	10010000	R	2	20.012	20.890	1.756	8.1
4	10040000	R	2	7.604	8.123	1.038	17.2
5	10040000	C	2	8.314	9.084	1.540	13.3
6	14030000	L	3	0.990	3.037	6.141	20.3
7	15010000	C	3	0.000	0.506	1.518	11.2
8	16300000	L	2	2.335	3.477	2.284	17.1
9	16300000	L	2	3.477	5.733	4.512	15.3
10	17040000	L	3	5.129	5.682	1.659	11.3
11	29020000	C	2	15.922	18.651	5.458	16.5
12	29020000	C	2	18.956	22.077	6.242	16.3
13	70050000	R	2	14.004	14.489	0.970	16.9
14	70050000	L	2	14.004	14.489	0.970	14.2
15	71020000	C	2	0.000	1.188	2.376	14.8
16	72220000	R	3	6.433	7.595	3.486	16.4
17	72220000	L	3	6.433	7.595	3.486	16.5
18	76030000	L	2	0.209	0.856	1.294	12.0
19	76030000	R	2	0.209	0.856	1.294	15.3
20	86060000	L	2	0.498	3.503	6.010	11.9
21	86060000	R	2	0.498	3.503	6.010	15.3
22	86220000	R	3	3.967	6.002	6.105	15.0
23	93004000	R	3	2.523	3.061	1.614	12.4
24	94010000	L	3	0.337	0.875	1.614	7.8
					Weighted Average Life		14.9
					Mean		14.1
					Minimum		7.8
					Maximum		20.3

**Table 4.3 Pavement Performance Life
Primary System, New Construction Project**

CURVE #	RDWYID	RDWSIDE	LANES	BEG	END	LANE-MILE	AGE
1	01010000	R	2	0.491	4.980	8.978	19.2
2	01010000	L	2	5.000	6.800	3.600	21.6
3	15150000	R	3	30.826	31.332	1.518	14.2
4	17005000	L	2	0.165	3.048	5.766	12.8
5	17005000	R	2	0.165	3.048	5.766	12.5
6	36070000	L	2	14.084	17.068	5.968	12.7
7	36110000	L	2	24.113	24.900	1.574	15.1
8	53030000	R	2	14.020	16.200	4.360	10.6
9	55050000	R	2	2.001	2.467	0.932	15.2
10	55050000	L	2	2.001	2.467	0.932	15.2
11	58040000	C	2	0.000	2.817	5.634	12.7
						Weighted Average Life	14.7
						Mean	14.7
						Minimum	10.6
						Maximum	21.6

**Table 4.4 Pavement Performance Life
Interstate System, Resurfacing Project**

CURVE #	RDWYID	RDWYSIDE	LANES	BEG	END	LANE-MILE	AGE
1	01075000	L	2	8.503	9.047	1.088	10.2
2	01075000	L	2	9.047	15.760	13.426	10.3
3	03175000	L	2	50.094	52.682	5.176	5.9
4	08150000	R	2	0.000	3.846	7.692	16.0
5	08150000	L	2	0.000	3.800	7.600	15.9
6	08150000	L	2	7.080	10.766	7.372	9.5
7	10190000	L	2	12.868	14.088	2.440	10.4
8	12075000	R	2	13.940	16.414	4.948	5.4
9	13075000	R	3	15.723	17.769	6.138	8.5
10	13075000	L	3	17.769	20.571	8.406	8.6
11	14140000	L	2	0.000	0.817	1.634	9.9
12	14140000	R	2	0.000	0.817	1.634	9.0
13	14140000	R	2	12.000	15.390	6.780	9.6
14	17075000	L	2	0.000	4.214	8.428	11.3
15	17075000	L	2	22.885	25.553	5.336	9.9
16	18130000	L	2	0.000	0.998	1.996	12.5
17	18130000	R	2	1.033	4.096	6.126	13.5
18	18130000	L	2	7.721	10.387	5.332	12.5
19	26260000	R	3	14.576	19.071	13.485	8.2
20	26260000	L	3	26.207	30.000	11.379	9.5
21	27090000	L	2	0.000	8.884	17.768	17.0
22	27090000	R	2	9.544	15.000	10.912	7.9
23	29170000	R	2	0.000	1.846	3.692	11.2
24	29170000	L	2	0.000	1.846	3.692	19.4
25	29180000	L	2	0.164	2.145	3.962	8.2
26	29180000	R	2	3.416	4.531	2.230	11.6
27	32100000	L	2	0.000	5.000	10.000	7.6
28	35090000	R	2	11.372	15.000	7.256	9.4
29	35090000	L	2	15.000	16.941	3.882	14.1
30	36210000	L	3	0.000	4.947	14.841	12.8
31	36210000	R	3	0.000	4.947	14.841	10.5

Table 4.4 -- continued

CURVE #	RDWYID	RDWYSIDE	LANES	BEG	END	LANE-MILE	AGE
32	37120000	L	2	6.465	14.220	15.510	6.4
33	37120000	R	2	6.465	14.220	15.510	6.7
34	50001000	L	2	1.278	11.896	21.236	9.2
35	50001000	R	2	1.278	11.896	21.236	8.6
36	70225000	L	2	1.248	3.926	5.356	10.1
37	72001000	L	3	9.960	10.600	1.920	11.7
38	72270000	L	2	12.212	15.377	6.330	13.0
39	73001000	L	2	6.847	11.046	8.398	11.5
40	73001000	R	2	6.847	11.046	8.398	21.2
41	75280000	R	3	23.378	24.050	2.016	9.0
42	77160000	L	3	2.172	3.227	3.165	13.6
43	79002000	R	2	27.854	28.758	1.808	9.6
44	79002000	L	2	32.664	35.042	4.756	4.8
45	79110000	L	2	0.503	3.296	5.586	16.7
46	79110000	R	2	6.863	9.040	4.354	8.8
47	88081000	R	2	4.179	5.713	3.068	14.9
48	88081000	R	2	6.165	9.525	6.720	19.1
49	92130000	L	2	3.542	6.517	5.950	13.4
50	93220000	R	3	9.252	9.820	1.704	11.0
51	93220000	L	3	10.559	11.340	2.343	15.9
52	93220000	R	3	14.154	15.240	3.258	16.1
53	94001000	L	2	20.312	23.460	6.296	8.8
54	94001000	R	2	20.312	23.460	6.296	11.2
55	94001000	L	3	0.000	4.712	14.136	5.8
56	94001000	R	3	0.000	4.712	14.136	5.7
					Weighted Average Life	10.5	
					Mean	11.1	
					Minimum	4.8	
					Maximum	21.2	

**Table 4.5 Pavement Performance Life
Interstate System, Reconstruction Project**

CURVE #	RDWYID	RDWSIDE	LANES	BEG	END	LANE-MILE	AGE
1	12075000	L	2	8.639	12.670	8.062	10.3
2	26260000	L	3	0.000	0.978	2.934	11.0
3	26260000	L	3	9.740	11.005	3.795	11.1
4	29180000	R	2	26.000	27.000	2.000	12.2
5	32100000	R	2	5.000	8.874	7.748	9.3
6	32100000	L	2	9.079	10.280	2.402	8.3
7	32100000	R	2	20.000	25.000	10.000	11.1
8	32100000	R	2	25.000	28.700	7.400	11.1
						Weighted Average Life	10.5
						Mean	10.6
						Minimum	8.3
						Maximum	12.2

**Table 4.6 Pavement Performance Life
Interstate System, New Construction Project**

CURVE #	RDWYID	RDWSIDE	LANES	BEG	END	LANE-MILE	AGE
1	01075000	R	2	0.000	1.067	2.134	12.8
2	10075000	R	3	0.000	5.795	17.385	9.9
3	10075000	L	3	11.589	12.229	1.920	8.4
4	17075000	R	2	0.000	4.212	8.424	11.2
5	79002000	R	2	3.065	9.800	13.470	13.9
6	86070000	R	5	4.648	5.137	2.445	16.2
7	86075000	R	4	0.000	2.216	8.864	11.6
						Weighted Average Life	11.7
						Mean	12.0
						Minimum	8.4
						Maximum	16.2

Table 4.7 Summary of Pavement Performance Life Estimates

Age(Yrs)	New Construction	Reconstruction	Resurfacing	Mean Value
Primary				
W. Average Age	14.7	14.9	13.0	14.2
Mean	14.7	14.1	12.6	13.8
Minimum	10.6	7.8	3.0	7.1
Maximum	21.6	20.3	22.8	21.6
Interstate				
W. Average Age	11.7	10.5	10.5	10.9
Mean	12.0	10.6	11.1	11.2
Minimum	8.4	8.3	4.8	7.1
Maximum	16.2	12.2	21.2	16.5

**Table 4.8 Pavement Performance Life by Interstate Name
Resurfacing Project**

Age(Yrs)	1 - 4	1 - 10	1 - 75	I - 95	I - 295	Mean Value
W. Average Age	12.7	10.1	10.4	10.8	11.7	11.1
Mean	12.0	11.2	10.3	11.8	11.7	11.4
Minimum	8.8	6.4	5.4	4.8	11.7	7.4
Maximum	16.7	19.4	16.0	21.2	11.7	17.0

Table 4.9 Pavement Performance Life by District Resurfacing Project

Age(Yrs)	District 1	District 2	District 3	District 4	District 5	District 6	District 7	Mean Value
Primary System								
W. Average	13.6	14.4	13.2	11.4	13.1	12.6	10.6	12.7
Mean	13.1	12.7	13.0	12.0	13.0	12.6	10.6	12.4
Minimum	7.8	3.0	6.7	4.9	6.0	9.2	7.1	6.4
Maximum	17.8	22.8	21.7	20.1	21.1	18.0	16.2	19.7
Interstate System								
W. Average	9.0	10.1	8.9	9.8	12.5	N/A	12.4	10.5
Mean	8.8	10.8	8.9	12.1	12.0	N/A	11.5	10.7
Minimum	5.4	6.4	8.6	5.7	4.8	N/A	9.0	6.7
Maximum	11.3	19.4	9.2	19.1	21.2	N/A	16.0	16.0

**Table 4.10 Distribution of Pavement Age
Two Hundreds Seventy Nine Pavement Sections**

Age	Number or Percentage of Sections							
	Group I		Group II		Group III		Total	
	Subtotal = 78(100%)		Subtotal = 54(100%)		Subtotal = 147(100%)		279(100%)	
	Number	%	Number	%	Number	%	Number	%
1								
2								
3	1	1.28					1	0.36
4								
5	3	3.85			1	0.68	4	1.43
6	2	2.56			3	2.04	5	1.79
7	6	7.69			1	0.68	7	2.51
8	10	12.82	2	3.70	7	4.76	19	6.81
9	5	6.41	5	9.26	19	12.93	29	10.39
10	7	8.97	5	9.26	12	8.16	24	8.60
11	12	15.38	6	11.11	12	8.16	30	10.75
12	11	14.10	6	11.11	13	8.84	30	10.75
13	8	10.26	2	3.70	19	12.93	29	10.39
14	4	5.13	7	12.96	9	6.12	20	7.17
15	2	2.56	6	11.11	17	11.56	25	8.96
16	1	1.28	5	9.26	11	7.48	17	6.09
17	3	3.85	5	9.26	9	6.12	17	6.09
18	1	1.28	3	5.56	5	3.40	9	3.23
19	2	2.56	1	1.85	2	1.36	5	1.79
20					2	1.36	2	0.72
21			1	1.85	2	1.36	3	1.08
22					2	1.36	2	0.72
23					1	0.68	1	0.36
24								
25								

**Table 4.11 Distribution of Pavement Age
Primary and Interstate System, Resurfacing Project**

Age	Number or Percentage of Sections			
	Primary		Interstate	
	Number	%	Number	%
1				
2				
3	1	0.58		
4				
5	2	1.16	2	3.57
6	1	0.58	4	7.14
7	5	2.89	1	1.79
8	11	6.36	4	7.14
9	17	9.83	10	17.86
10	13	7.51	10	17.86
11	16	9.25	5	8.93
12	20	11.56	4	7.14
13	21	12.14	3	5.36
14	14	8.09	3	5.36
15	16	9.25	1	1.79
16	10	5.78	4	7.14
17	10	5.78	2	3.57
18	9	5.20		
19	2	1.16	2	3.57
20	1	0.58		
21	2	1.16	1	1.79
22	1	0.58		
23	1	0.58		
24				
25				
Total	173	100.00	56	100.00

Figure 4.1 Pavement Performance Life for Primary System

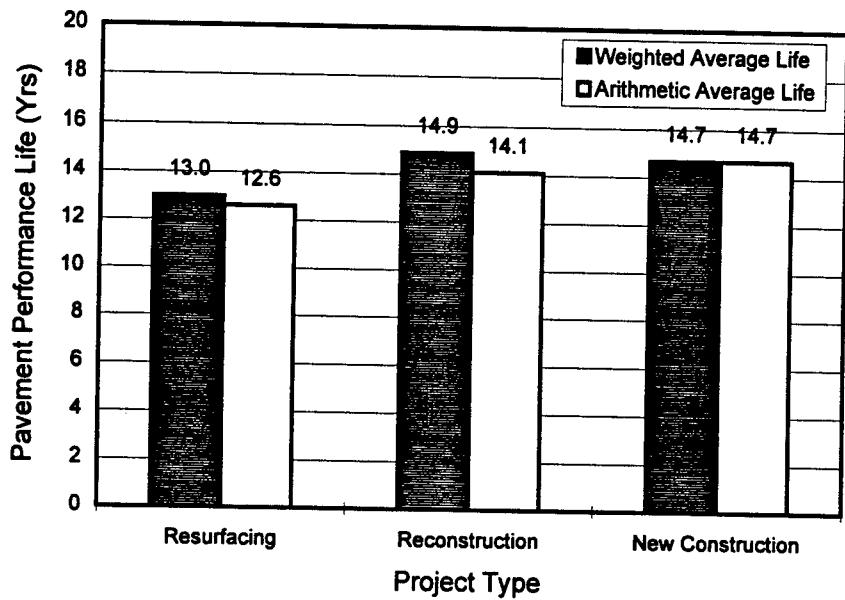


Figure 4.2 Pavement Performance Life for Interstate System

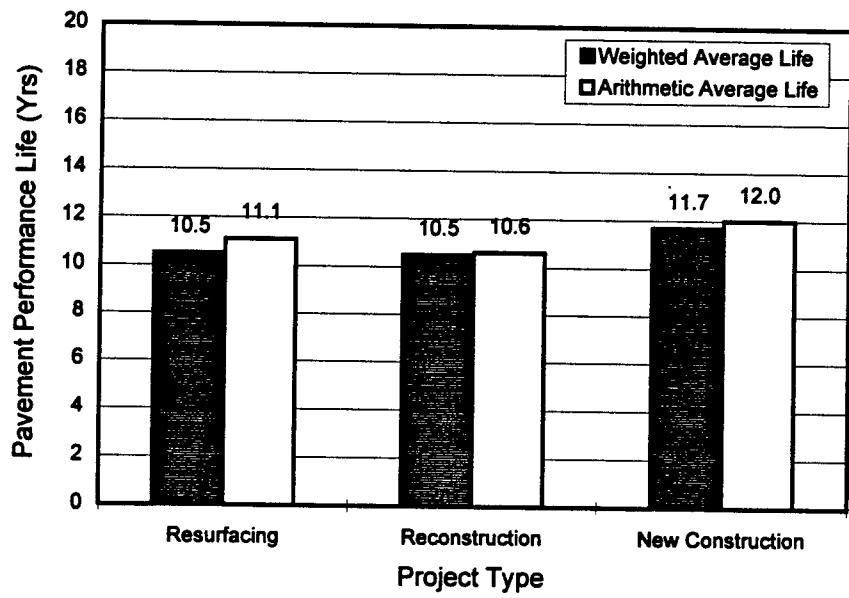


Figure 4.3 Pavement Performance Life by Individual Interstate Highways Resurfacing Project

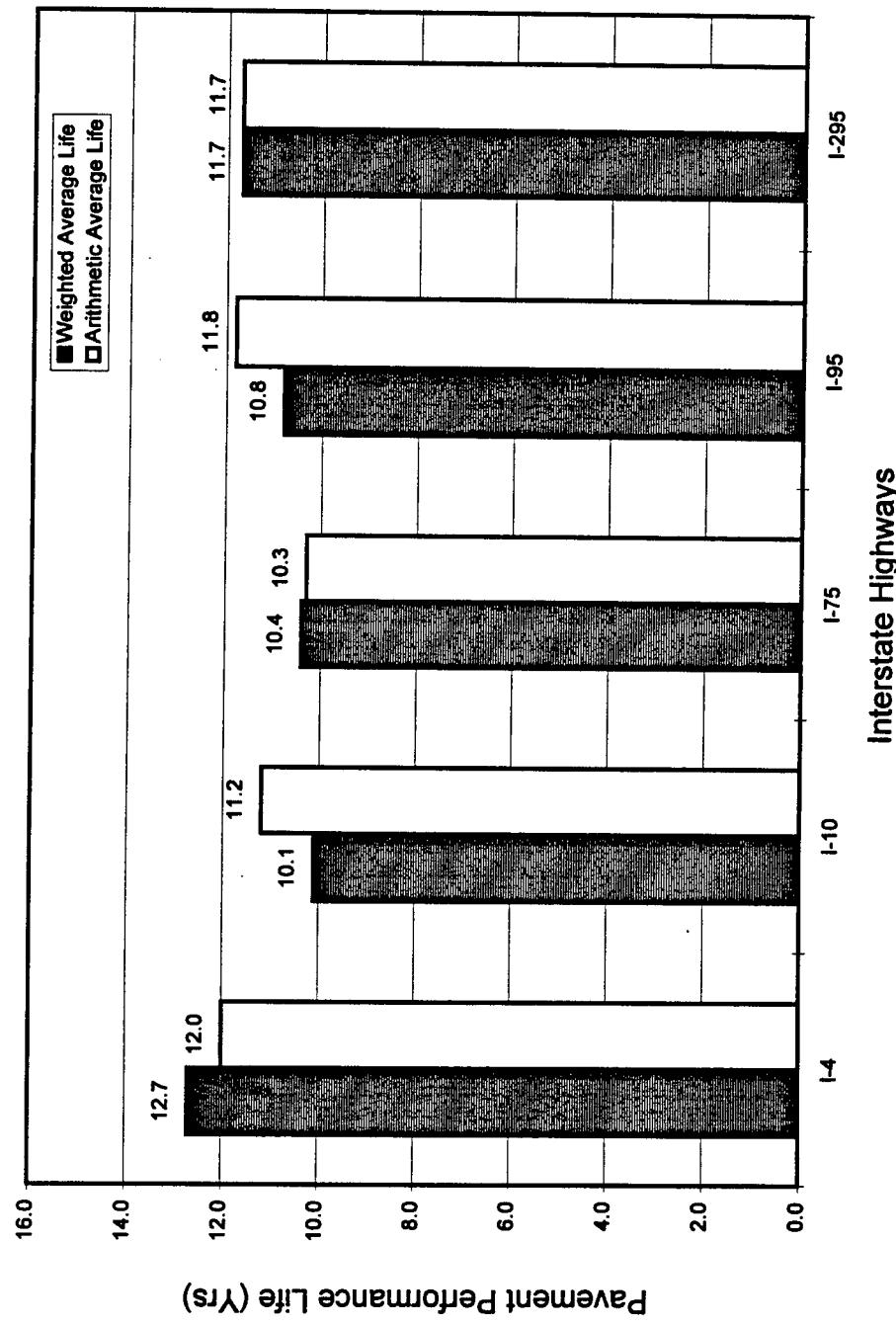


Figure 4.4 Pavement Performance Life by Individual District Primary System, Resurfacing Project

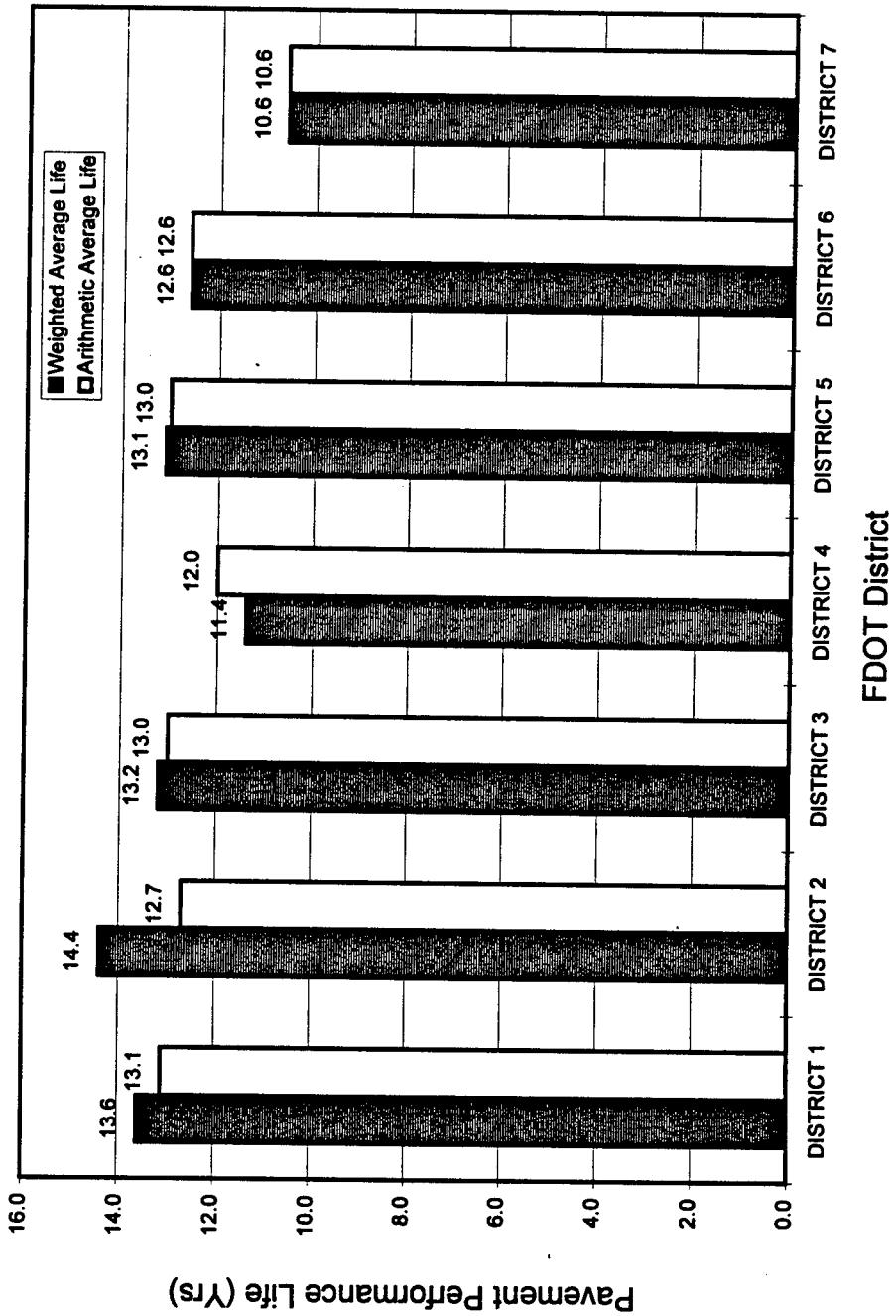


Figure 4.5 Pavement Performance Life by Individual District Interstate System, Resurfacing Project

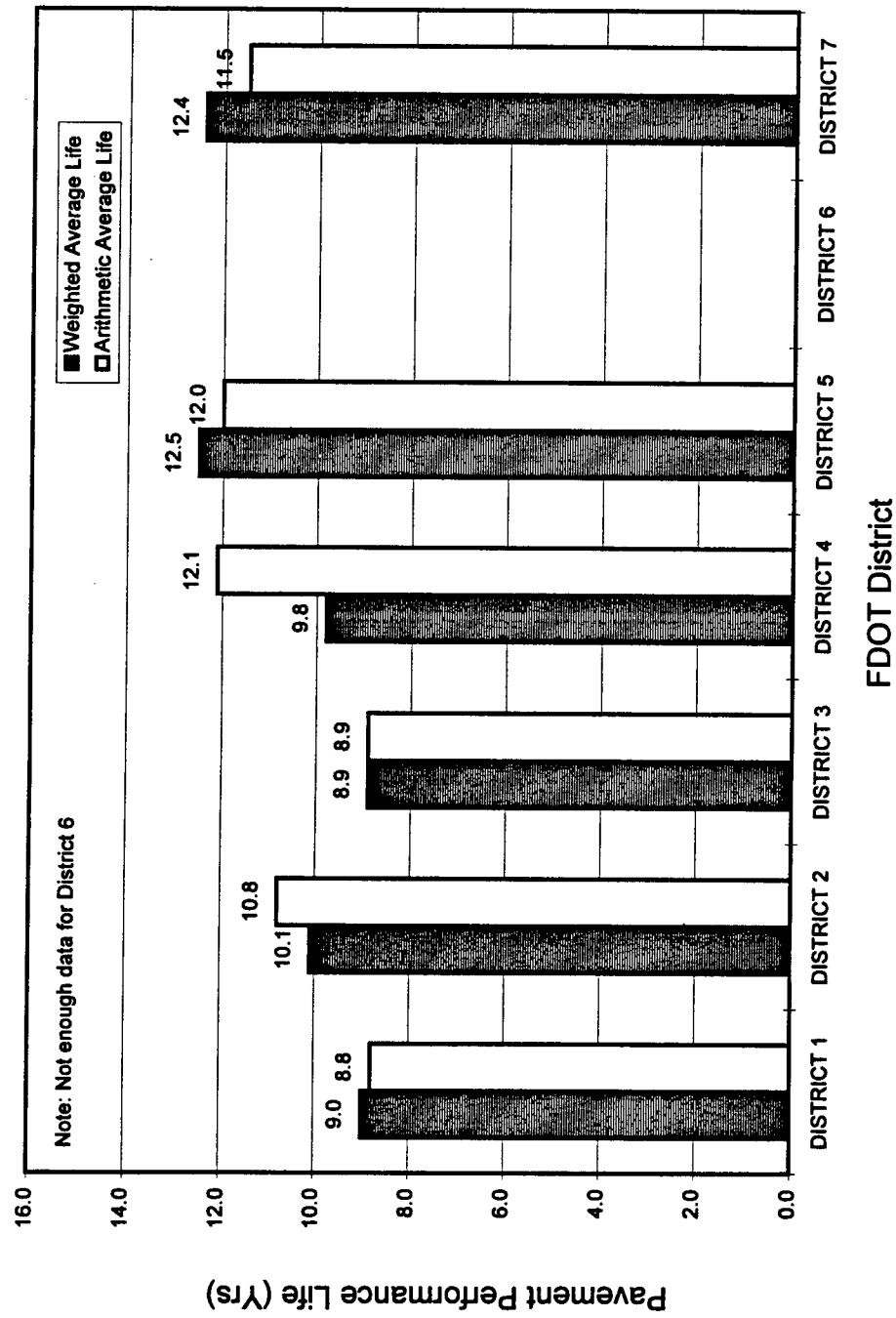


Figure 4.6 Distribution of Pavement Age

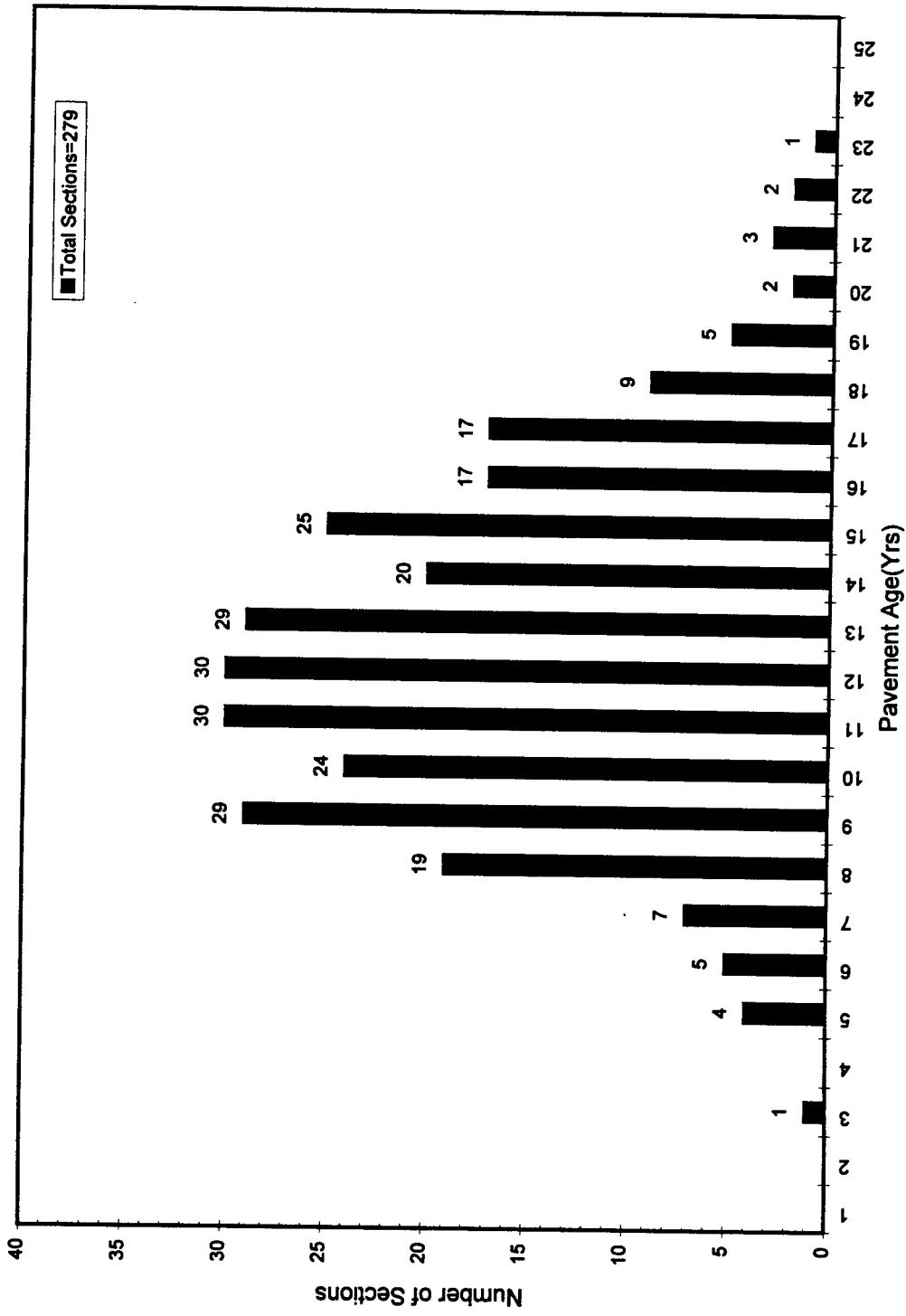


Figure 4.7 Distribution of Pavement Age within Group I

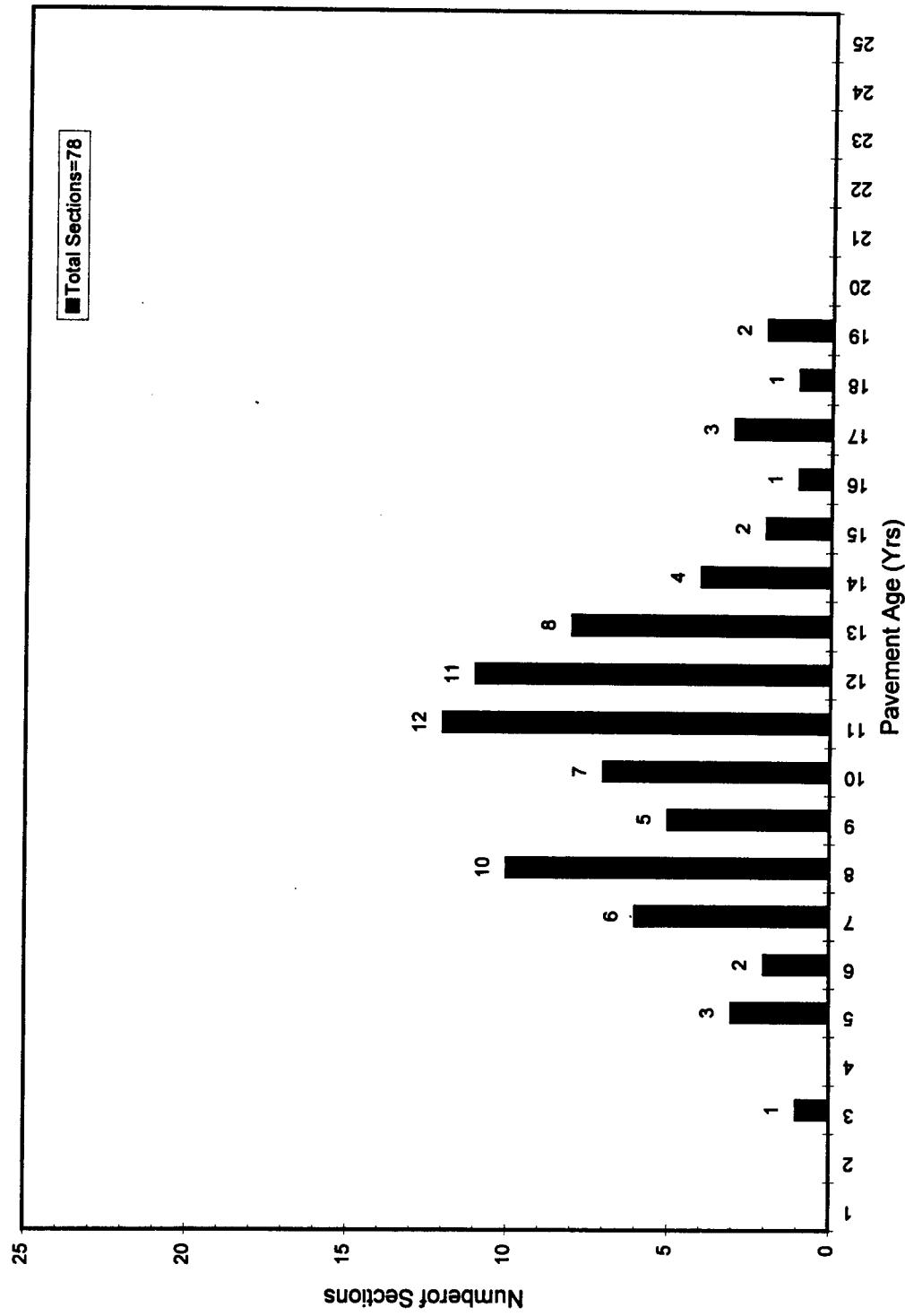


Figure 4.8 Distribution of Pavement Age within Group II

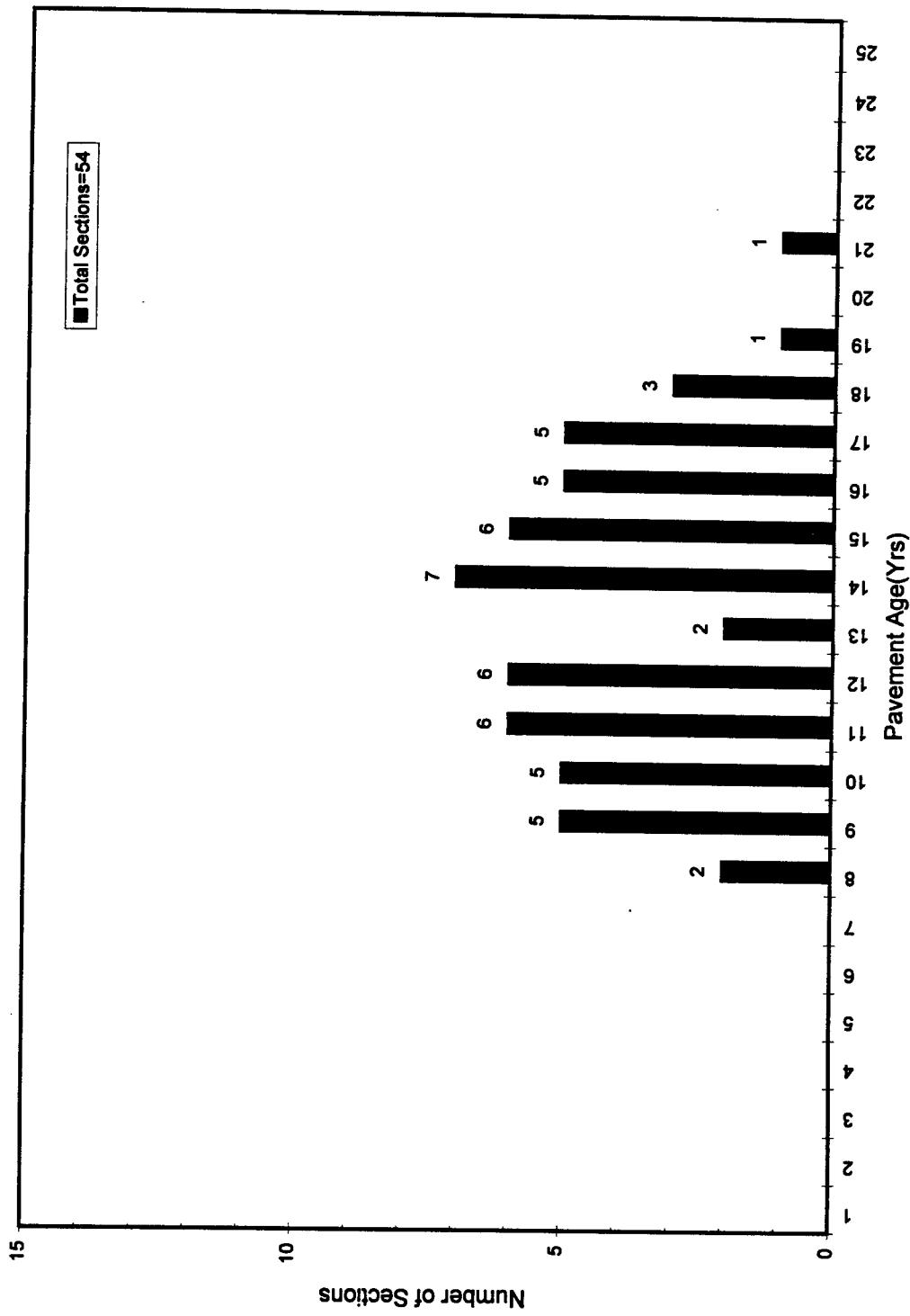
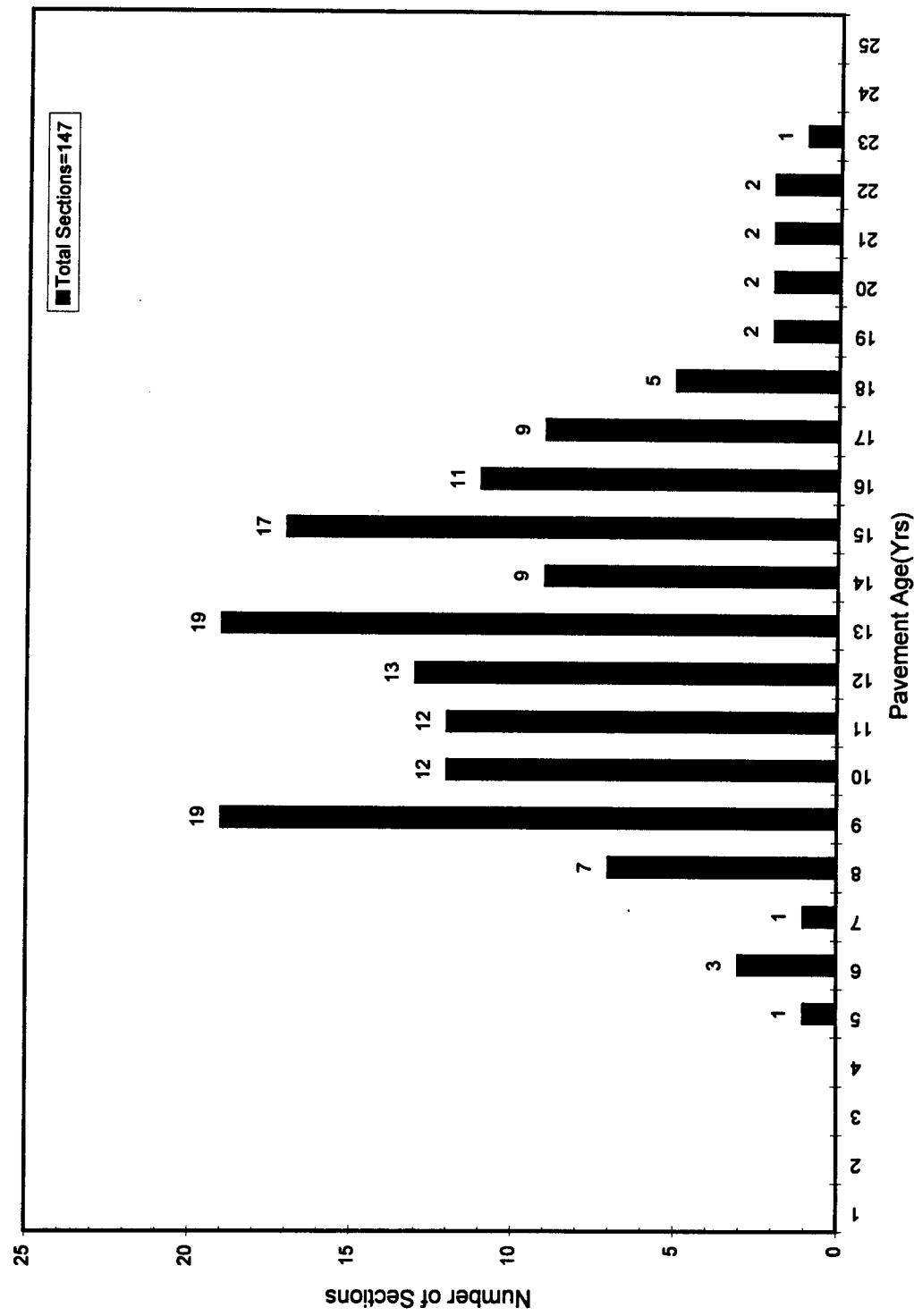
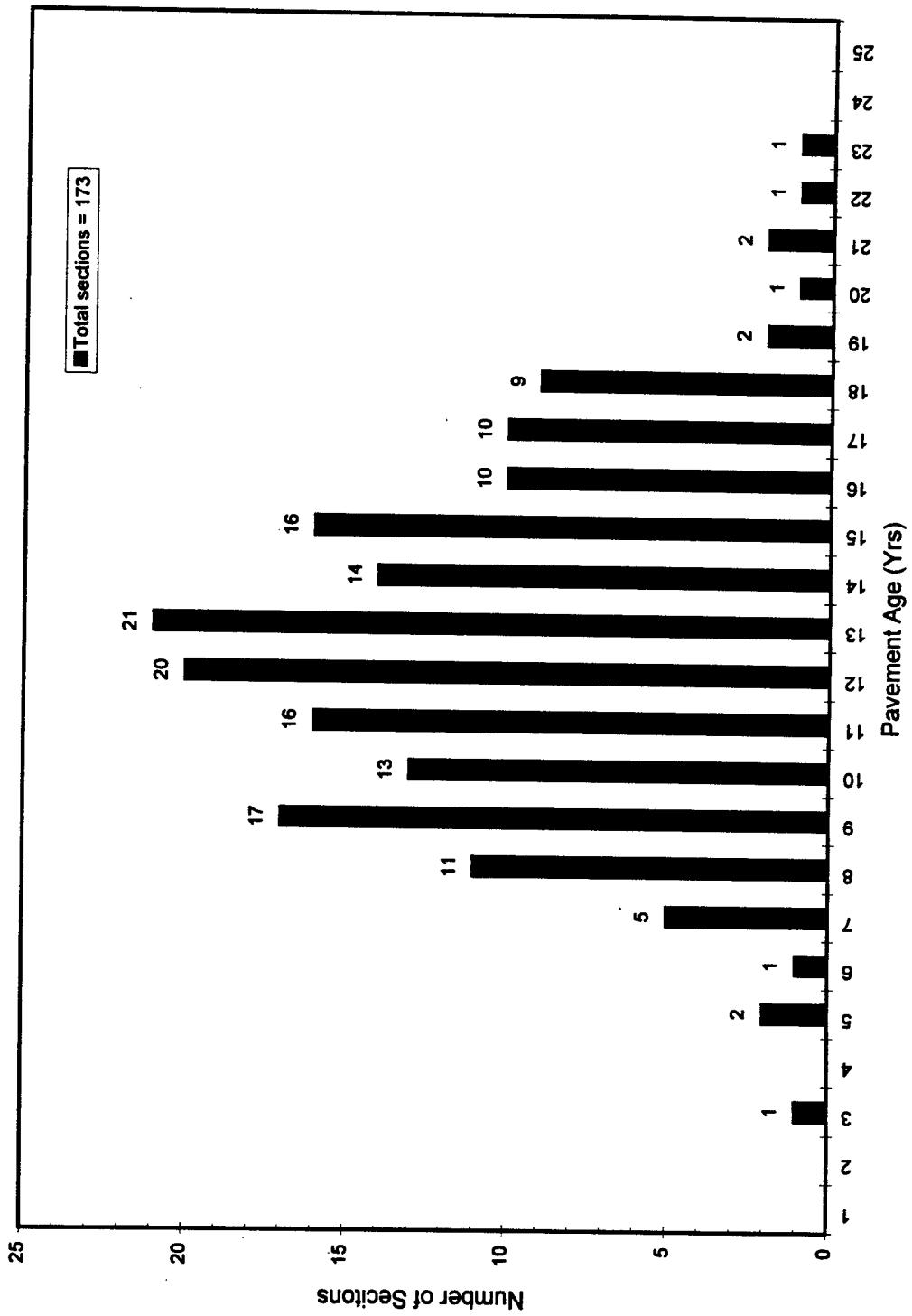


Figure 4.9 Distribution of Pavement Age within Group III



**Figure 4.10 Distribution of Pavement Age
Primary System Resurfacing project**



**Figure 4.11 Distribution of Pavement Age
Interstate System Resurfacing Project**

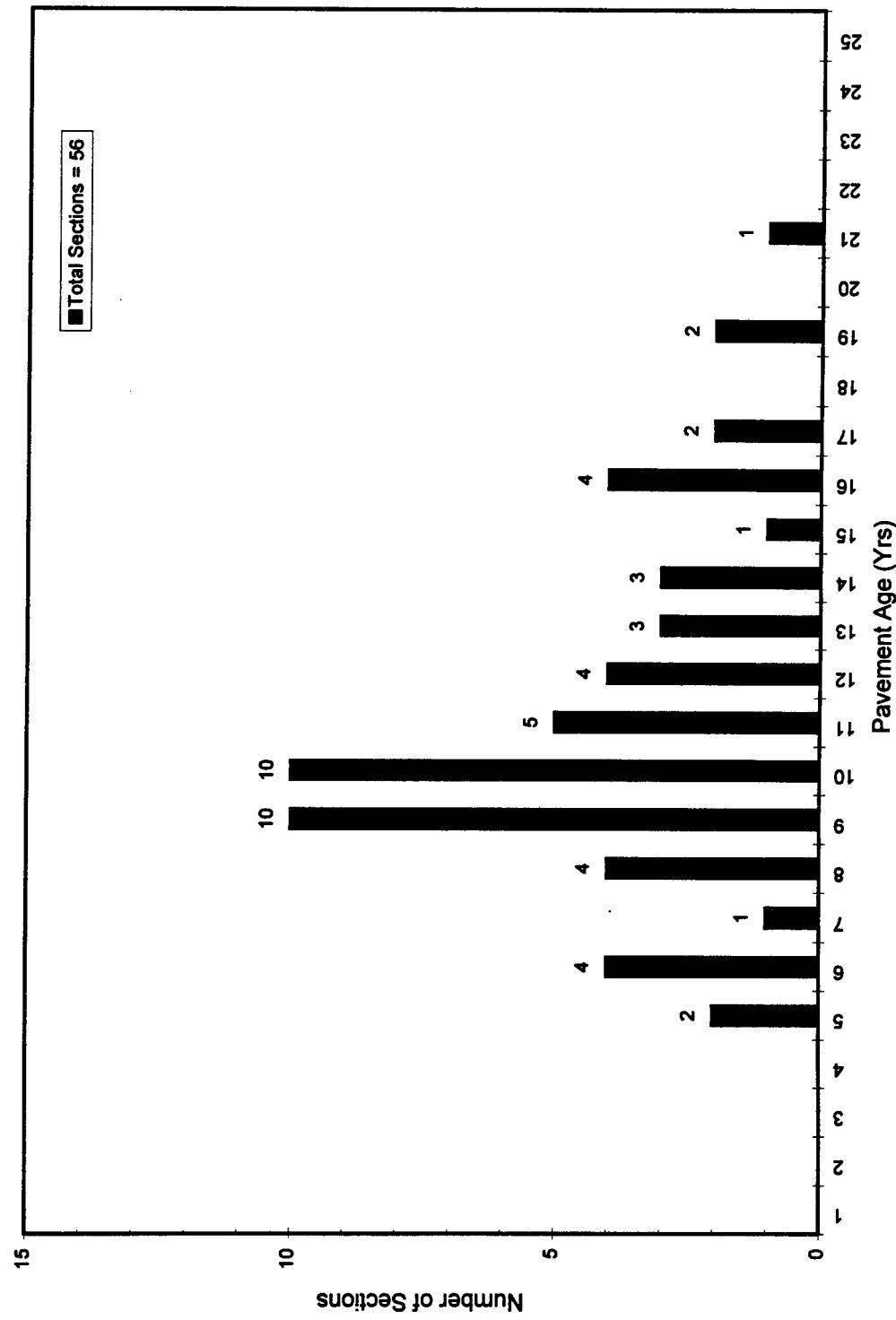
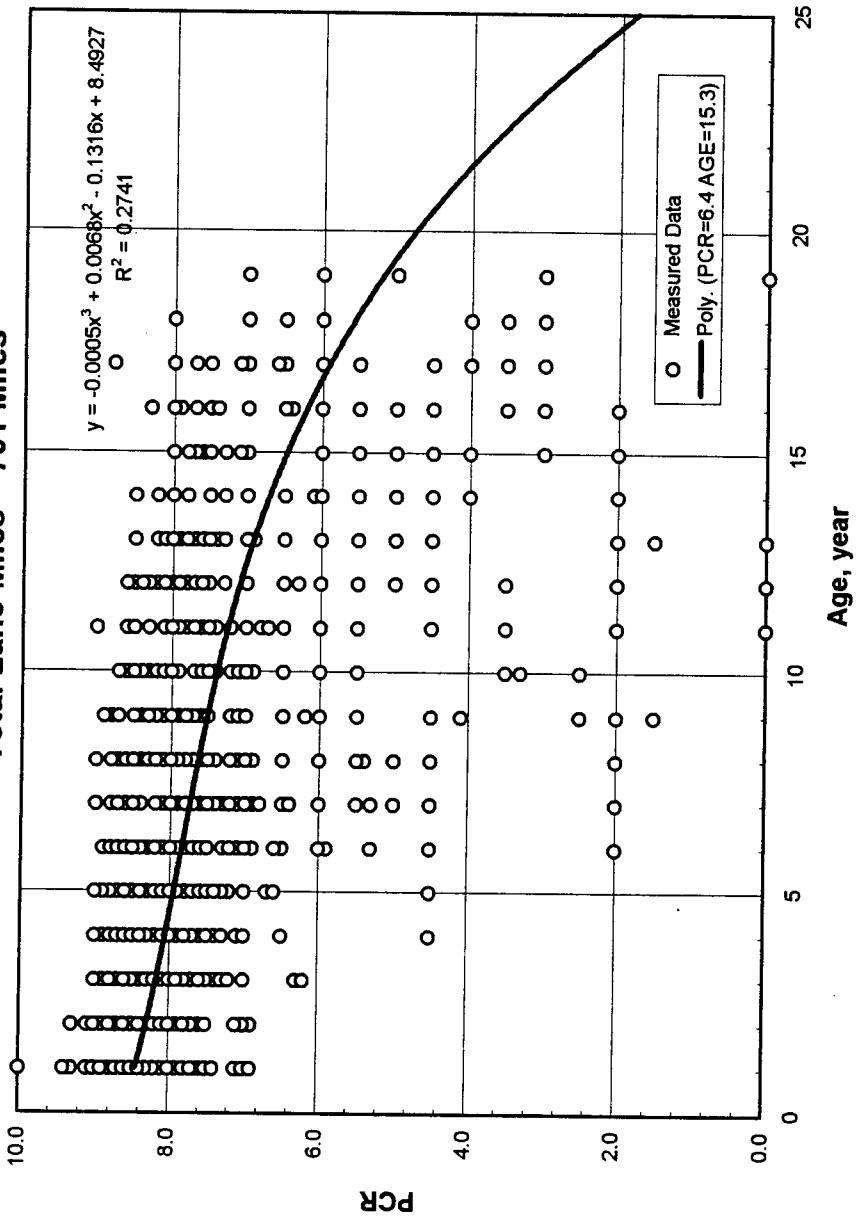


Figure 4.12 Polynomial Regression Curve Fitting
Resurfacing Project, Primary System
Total Lane-Miles = 791 Miles



**Figure 4.13 Polynomial Regression Curve Fitting
Resurfacing Project, Interstate System
Total Lane-Miles = 409 miles**

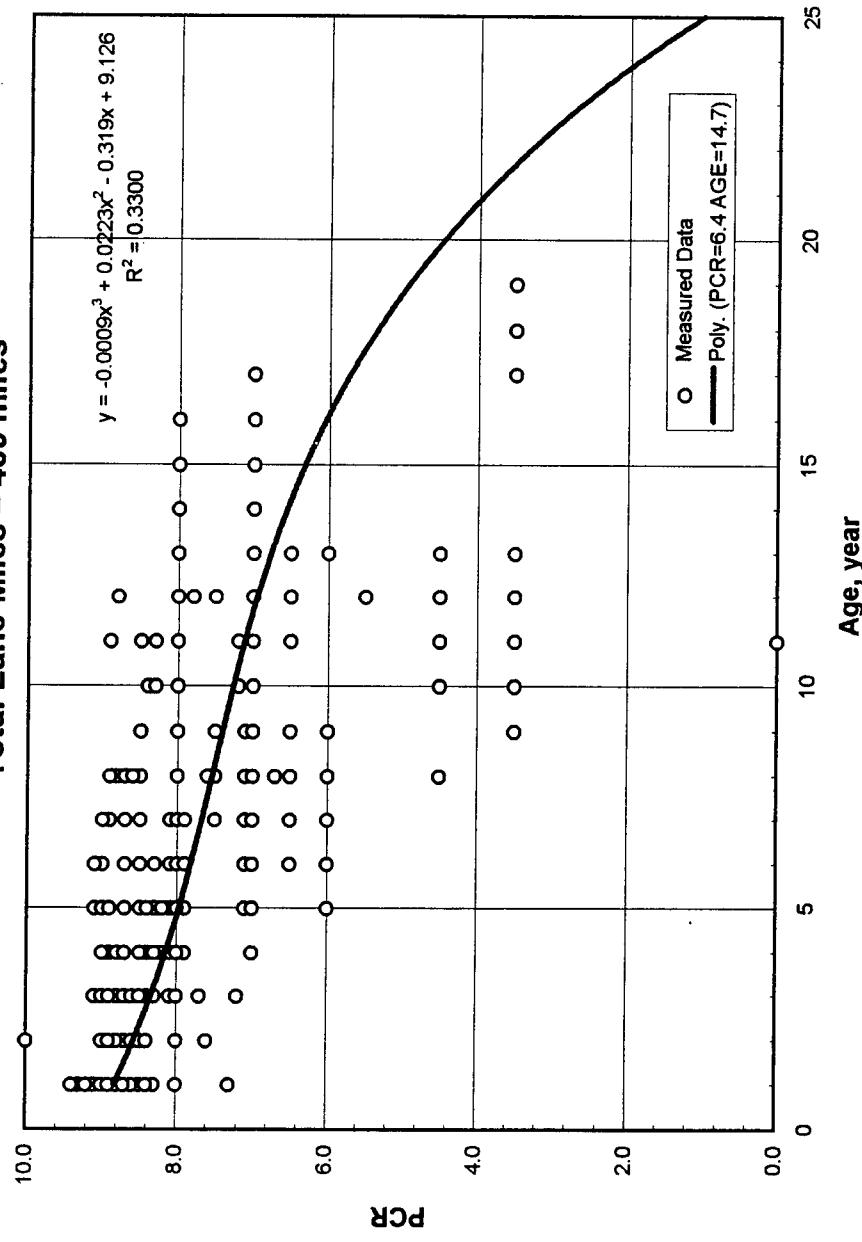
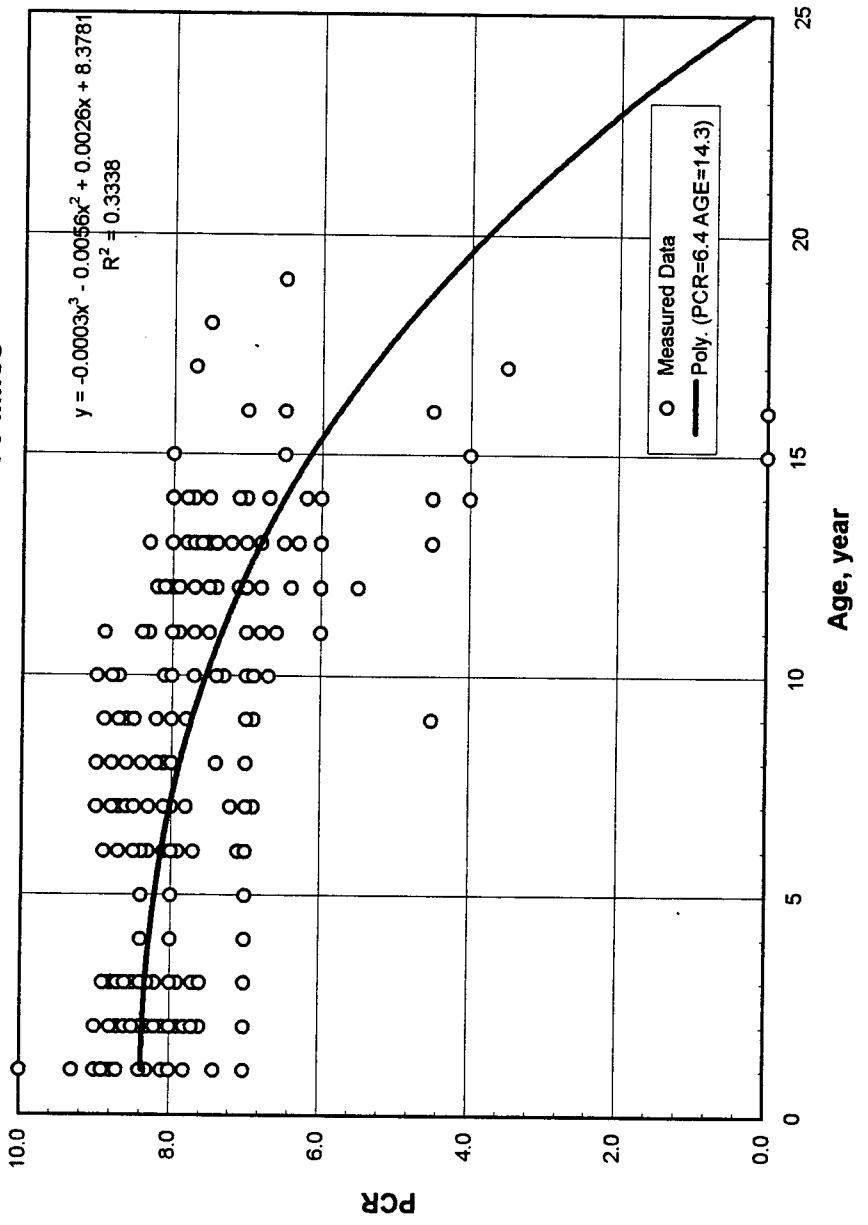
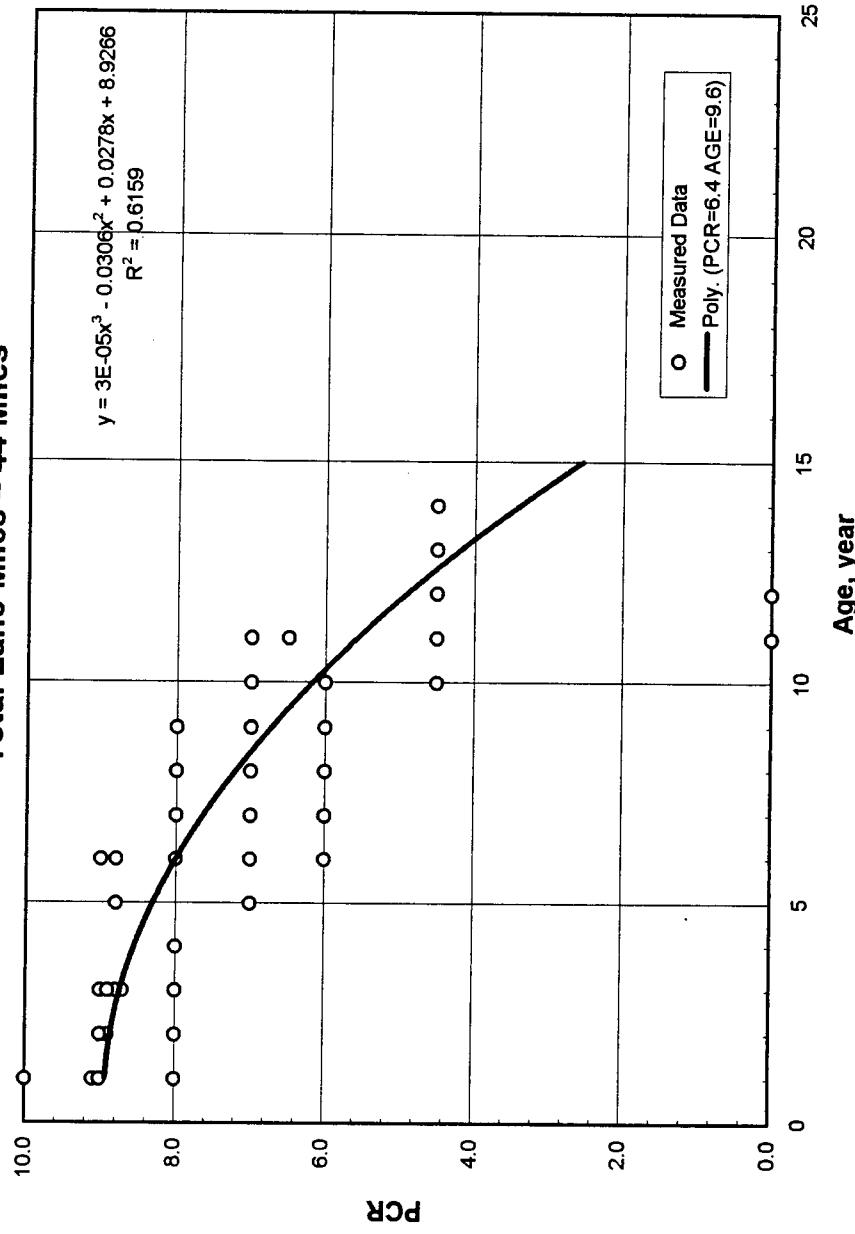


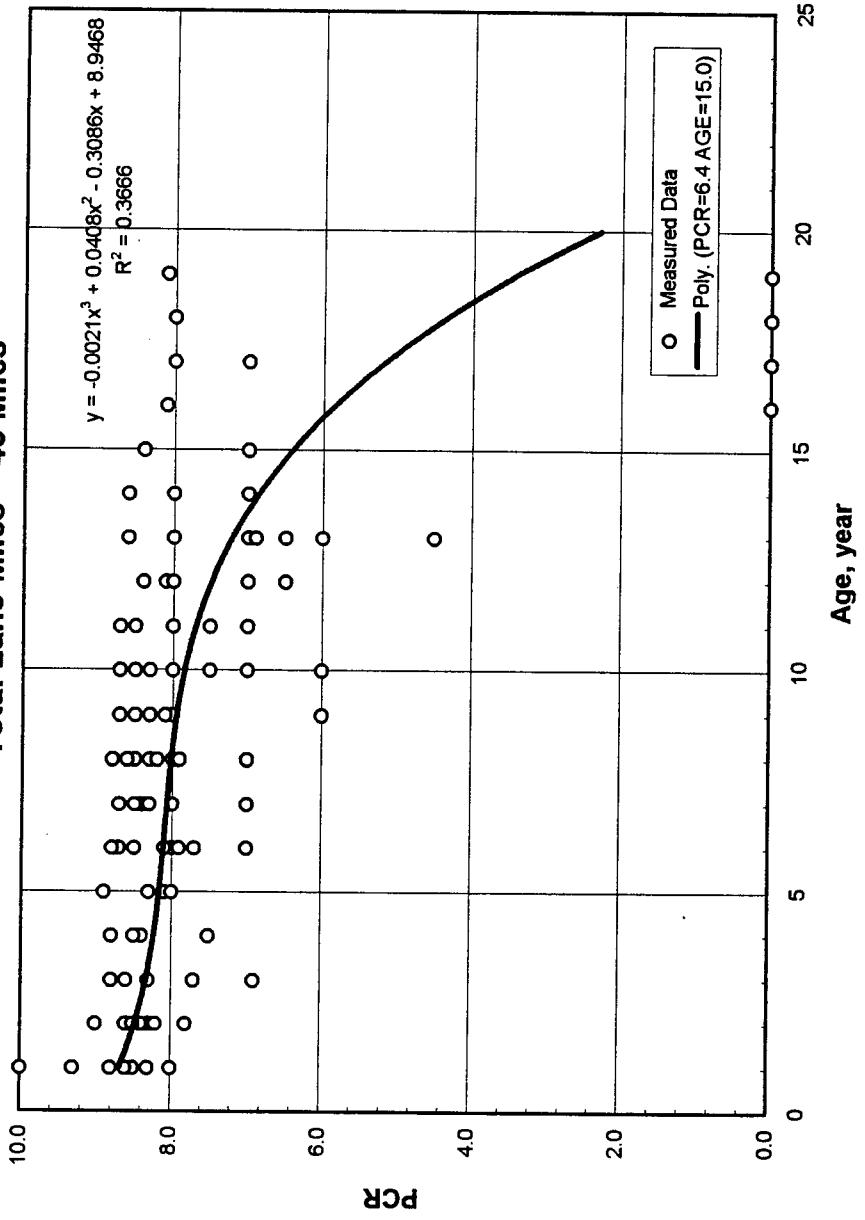
Figure 4.14 Polynomial Regression Curve Fitting
Reconstruction Project, Primary System
Total Lane-Miles = 70 Miles



**Figure 4.15 Polynomial Regression Curve Fitting
Reconstruction Project, Interstate System
Total Lane-Miles = 44 Miles**



**Figure 4.16 Polynomial Regression Curve Fitting
New Construction Project, Primary System
Total Lane-Miles = 45 Miles**



**Figure 4.17 Polynomial Regression Curve Fitting
New Construction Project, Interstate System
Total Lane-Miles = 55 Miles**

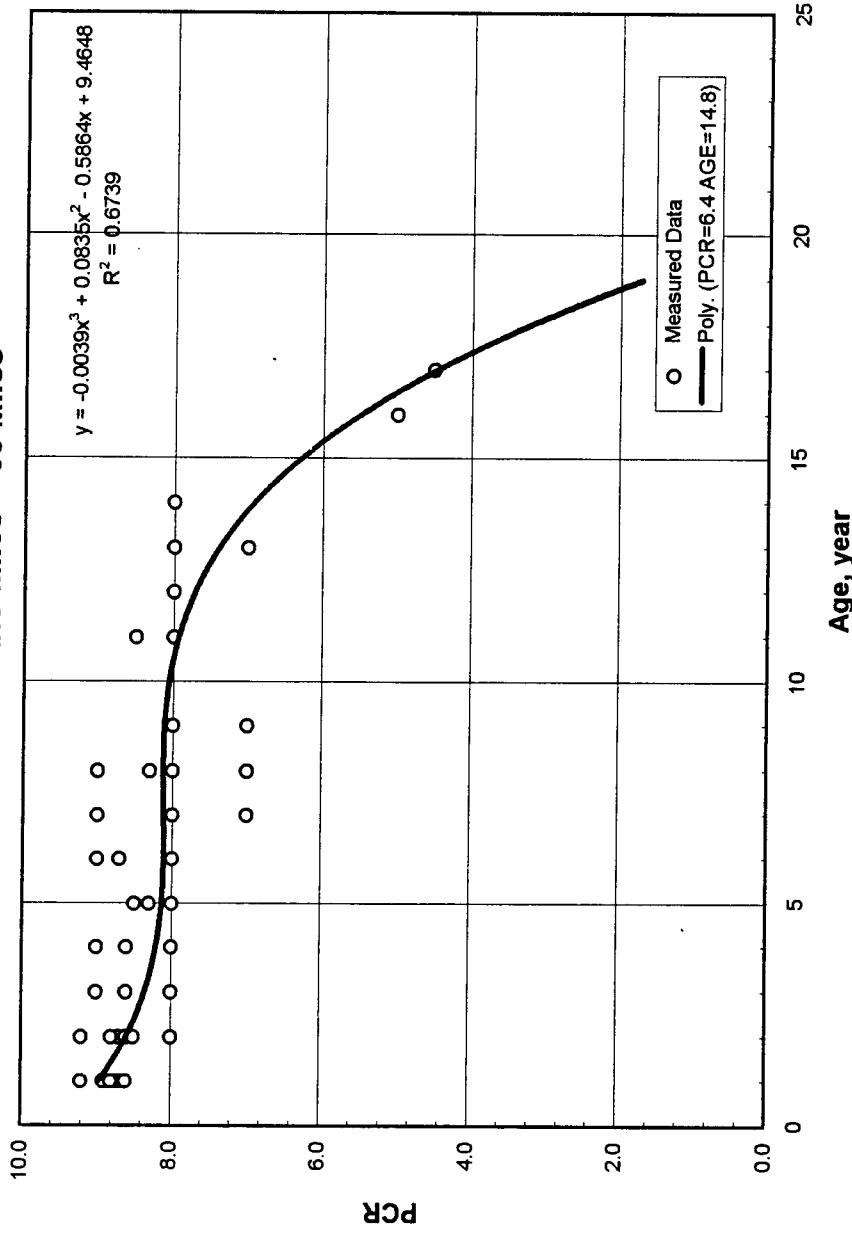
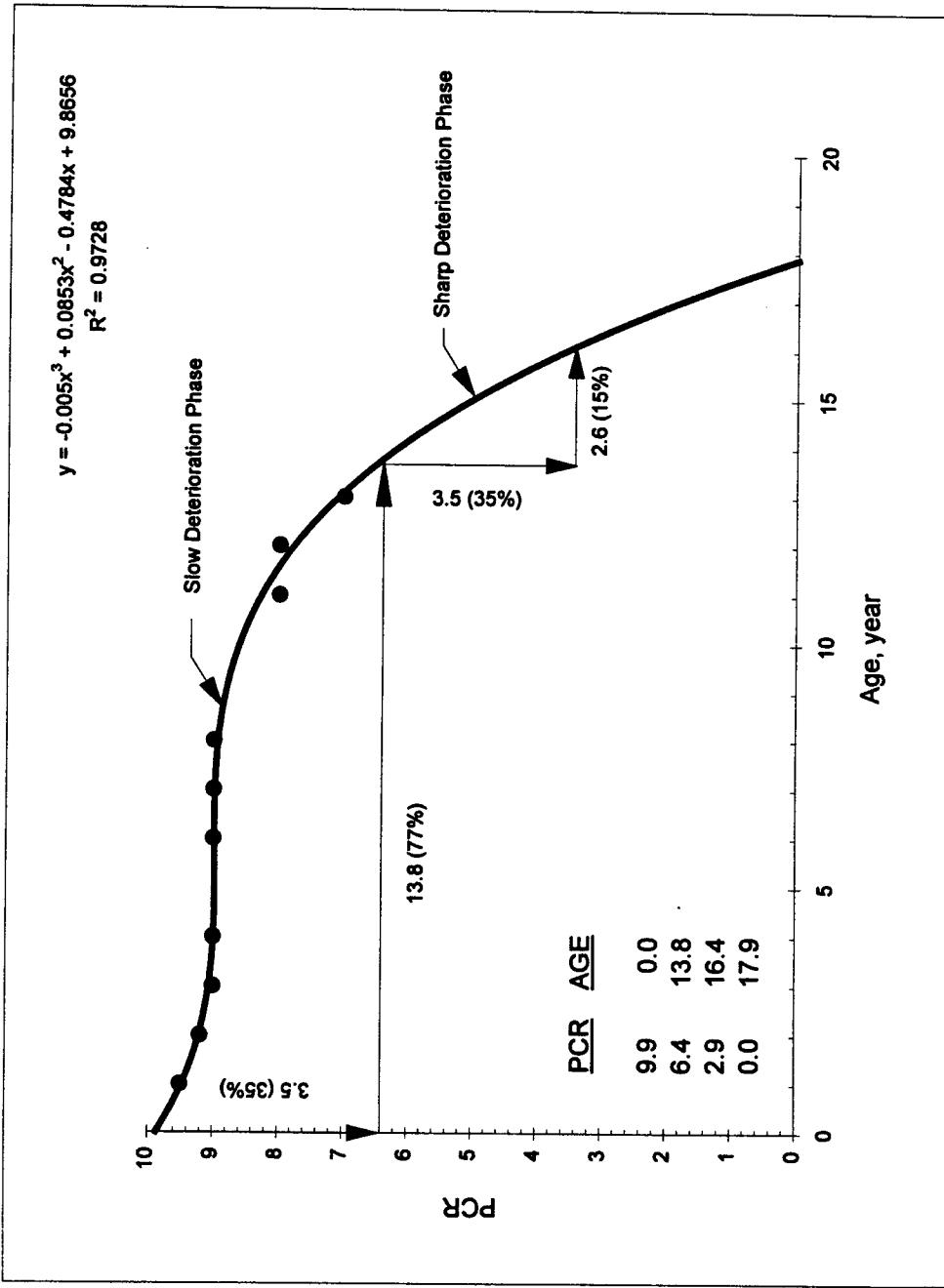


Figure 4.18 Sample of Pavement Performance Curve Analysis
RDWYID=79002000, RDWYSIDE=R
BEG=3.065, END=9.800



CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The conclusions based on the data and analysis for this study are made as follows:

1. Flexible pavement performance lives were evaluated for primary and interstate systems in Florida. In general, the primary system has longer average performance life than the interstate system for resurfacing, reconstruction, and new construction projects. However, the traffic volumes, traffic patterns, materials properties, and specifications may be different for these two systems.
2. There are slight variations in pavement performance life among geographical regions (or districts). However, many factors may have attributed to the differences such as the sample size, traffic conditions, environmental factors, materials specifications, etc.
3. This study has described an approach to estimate the flexible pavement performance life in Florida. The

pavement performance model presented in this study provides a useful tool for FDOT pavement management system. In general, polynomial model performs well in fitting the data, but it is not the best model in a few cases.

4. Although this is not a comprehensive study, the development of performance curves for the Florida pavement system present many interesting challenges. Pavement performance curves for flexible pavements in each of the project types (new construction, reconstruction, and resurfacing) were developed for both primary and interstate systems. These curves could be used for estimating the pavement performance life for a specific project type and system. However, they are not proper to be used for an individual pavement section. In addition, past performance history is not necessary an indicator for future performance.
5. The case study of pavement performance curve indicates that if M&R activities are performed while the pavement is still in the "slow rate of deterioration" phase, life cycle cost may be reduced.

5.2 Recommendations

Based on the data analysis and model development, the following recommendations may be made.

1. The simple age-dependent model is the one used in this analysis. It is recommended that there be continued work with the data available for model development. More work is needed to quantify the influences of some additional factors such as environmental, structural, and loading variables so that the models can be refined and improved by considering these additional factors and as the data base expands. A wealth of available information currently is not utilized. The typical performance information available from the data can be used as another research data source for evaluating design, material, or construction parameters, and the effects they have on the pavement performance.
2. The historical data are needed in area that rely heavily on the expert opinion. Engineering judgment is an essential ingredient in the pavement performance prediction process. It can overcome problems due to lack of data, it can utilize engineering experience and knowledge of local conditions, and it can reflect the goals and objectives of the funding agency.
3. Pavement performance prediction is the most technologically difficult portion of pavement management and the most influential on the system. It is critical

that integrity of the performance curves be maintained and updated over time. A more comprehensive study should be performed for the network level pavement performance in the future.

APPENDIX A

FLEXIBLE PAVEMENT CONDITION SURVEY

A.1 Introduction

The present condition of flexible pavements is of interest to engineers of the pavement management, design, planning, and maintenance as well as other groups within the Florida Department of Transportation. Various types of instruments are available to aid the engineer in establishing pavement riding quality and structural adequacy. However, these instruments, by themselves, do not necessarily provide the desired information on the pavement. Thus, it is necessary to visually survey the pavement and record the condition in an orderly fashion.

The purpose of visual evaluation of the surface distress and determining the riding quality of the pavement is to provide information that can be used together with other data for the following purposes:

1. Determine the present condition of the State Roadway System;
2. Compare the present with past condition;
3. Predict deterioration rates;

4. Predict rehabilitation funding needs;
5. Justification for annual rehabilitation budget;
6. Justification for project rehabilitation;
7. Justification for distribution of rehabilitation funds to Districts.

The visual evaluation method includes the utilization of the specific form in the Flexible Pavement Condition Survey. Items recorded include the location of pavement distress and the riding quality whose output is converted to a ride rating value. This appendix is a brief summary of the flexible pavement condition survey practice in Florida.

A.2 Flexible Pavement Rating Form

The rating form for the flexible pavement condition survey is shown in Table A.1. The rating form contains information and data columns for the District, County, Section, Subsection, State Road Number, US Road Number, System Type, Roadway, Type Roadway, Begin Milepost, End Milepost based on the previous year's survey. If changes in rated section limits are made, then the information in error should be struck through and the correct information coded. A number of blank lines are provided for use in recording the ratings of sections which were not rated the previous year. The information will be collected at the rated section by the Pavement Condition Survey team.

A.3 Selection of Pavement Segment

The length of the pavement segment to be evaluated will vary depending upon a number of factors. These factors include:

1. County line;
2. County section or subsection;
3. Limits of present construction projects;
4. Significant changes in visual appearance or condition of the pavement;
5. Structures in excess of 0.25 mile (0.40 Kilometer) in length (roughness will be turned off on profiler);
6. Rigid Pavement in excess of 0.25 mile (0.40 Kilometer) in length (roughness will be turned off on profiler).

A.4 Evaluation Technique

The rating team should prepare a Straight Line Diagram (SLD) map illustrating the limits of roadway segments to be evaluated prior to the initiation of the survey as indicated in section A.3.

The rating team should ride the predetermined section with the distance measuring equipment in operation and at the same time note the locations where further subdivision is necessary based on their observations.

Ride Rating

The Ultrasonic Profiler output should contain the following information:

1. Date
2. D.O.T. Unit Number
3. District - County - Section Number and Subsection Number if necessary
4. State Road Number
5. Milepost Limits
6. Speed of Ultrasonic Profiler and
7. Roadway Direction (NB or SB, etc.)

Ride Rating will be calculated from the outside wheelpath profile value. Bridges and/or structures must be held out.

Cracking Rating

A second pass along the pavement segment evaluated will be driven at a reduced speed to evaluate cracking. Look at entire section length to be rated and record the average condition for the rated section. The average deduct values should truly represent the entire length of the section of the section being evaluated.

Cracking

Consideration is given to three different types of cracking in flexible pavements. Only significant cracking should be considered. Do not consider cracking in an isolated area, within the long section since this isolated section is not considered as being representative of the rated section. Use judgment as to whether it is significant for the entire section. The classes of cracks are described as follows:

Class IB - Hairline cracks that are 1/8 inch (3.18 millimeter) wide and either in the longitudinal or transverse direction. May have slight spalling and slight to moderate branching. See Figure 2a.

Class II - 1/8 inch (3.18 millimeters) to 1/4 inch (6.35 millimeters) wide cracks either longitudinal or transverse. May have moderate spalling or severe branching. Also include all cracks less than 1/4 inch (6.35 millimeters) wide which have formed cells less than 2 feet (0.61 meters) on the longest side (alligator cracking). See Figure 2a though 2c.

Class III - 1/4 inch (6.35 millimeters) wide or greater and extends in a longitudinal or transverse direction and cracks which are

opened to the base or underlying material. Also includes progressive Class II cracking resulting in severe spalling with chunks of pavement breaking out. Severe raveling (loss of surface aggregate) would also be classified as Class III cracking.

See Figure 2a through 2c.

Class IB cracks are to be estimated individually for the total linear length of the cracks. The wide of the affected area is to be taken as one (1) foot (0.30 meters). The accumulated square footage of the linear cracks for the entire rated section is to be added to the totals for Class II and Class III cracking and recorded as the predominate type present (See Figure 1a).

Class II and Class III area cracks or loss of aggregate are to be considered rectangular and the total square feet of pavement affected is to be accumulated with Class 1B cracking and recorded as the predominate type present (See Figure 1b and 1c).

Table A.2 lists the number of deduct points for each percentage range by inside and outside of wheelpaths. Values to be coded are also shown for each percentage range. In addition, cracking will be classified as being predominately either Alligator (A), Block (B), or a combination by coding either A, B, or C in Card Column 62.

In addition raveling or patching will be considered as Class III severity cracking. Cracking will be estimated as percent confined to wheelpaths (cw) and percent outside of wheelpaths (co). Table A.2 gives computer codes for percentages as well as numerical deduct. Note from Table A.2 that only the predominate type of cracking will be coded. For example if twenty percent of the wheelpaths had cracking and most of it was Class II a code of F would be used for the confined to wheelpaths (cw) category. Figures 1a through 1c gives an example of estimating cracking percentages.

Definition of cracking classes (IB, II, & III) are given in the previous section entitled "cracking". Graphic illustrations are shown in Figure 2a through 2c.

Patching

Areas of patching are to be measured in the same manner as cracked areas. Only significant patching should be considered. Do not count an isolated patch in a long section if not considered representative of the rated section. Use judgment as to whether it is significant for the entire section. Patching should reflect a defect in the pavement that has been repaired.

Patching for the rated section is to be totaled with Class III cracking and then added to percentage for Class IB and Class II cracking. Only the predominate type of

cracking will be coded. Code remarks to reflect the presence of patching.

Raveling

Areas of raveling are to be measured in the same manner as cracked areas. Only significant raveling should be considered. Do not count an isolated area, in a long section if not considered representative of the rated section.

Raveling for the rated section is to be accumulated in the total percentage for Class III cracking. The total is then added to percentage for Class IB and Class II cracking. Only the predominant type of cracking will be coded. Code remarks to reflect the presence of raveling. In addition raveling will also be coded as follows:

Light Raveling - The aggregate and/or binder has begun to wear away but has not progressed significantly. Some loss of aggregate.

Moderate Raveling - The aggregate and/or binder has worn away and the surface texture is becoming rough and pitted; loose particles generally exist; loss of aggregate has progressed.

Severe Raveling - The aggregate and/or binder has worn away and the surface texture is very

rough and pitted; loss of aggregate very noticeable.

Coded as total percent of roadway, predominate severity level only. (Light, Moderate or severe) - also include as Class III Cracking.

Rut Rating

Rut Depths will be monitored while transitioning the sections for ride. The Ultrasonic Profiler will measure rut depths approximately every foot at 55 miles per hour. The average rut depth for both wheelpaths will be recorded. The computer program will convert the average rut depth to a one point per 1/8 inch (3.18 millimeters) of rutting value as indicated on Table A.3.

Manual Rut Depths will be required when the rated section cannot be surveyed by the Ultrasonic Unit (vehicle). Three measurements per mile, evenly distributed, using a six foot straight edge and scale will be required. Measurements will be recorded to the nearest 1/8 inch (3.18 millimeters) as indicated on Table A.3. See Figure A.3 for illustration.

Rut Depths (Ultrasonic)

The average rut depth (both wheelpaths combined) will be extracted from the Ultrasonic Profiler report and coded as indicated on Table A.3.

Manual rut depths will be recorded, if necessary, as indicated on Table A.3.

A.5 Pavement Rating Score

The Crack Rating (CR) is obtained by subtracting the "negative deduct values" associated with the various forms of cracking from 10. A Crack Rating score of 10 indicates a pavement without observable distress or only minor observable distress. Deduct values for flexible pavements are shown in Table A.2.

The Ride Rating Score (RR) is calculated with the following data:

1. Ultrasonic Profiler Unit Number (Vu)
2. IRI_{NF} for the Rated Section
3. Correlation Constants RC₁, RC₂ (Linear regression values comparing IRI from Profiler to PSI x 20 from CHLOE Profilometer).

The equation for computing the Ride Rating Score is as follows:

$$RR = \frac{RC_1 + (RC_2 \times IRI_{NF})}{10}$$

An example of the computation to determine a Ride Rating Score is

Given: Vu = 1

Therefore: RC₁ = 99.7576

RC₂ = 0.1569

Given: $IRI_{NP} = 50$

$$RR = \frac{99.7576 + (-0.1569 \times 50)}{10}$$
$$= 92$$

(RR = 92 would be 9.2 rounded off to 9 on 10 scale)

A Ride Rating Score of 10 indicates a pavement which is perfectly smooth. Ride Rating is actually calculated to a 100 scale and then reported on a 10 scale.

The Rut Defect Score (RD) is obtained by subtracting the negative deduct value associated with the Ultrasonic rut depth or Manual rut depth from 10. Deduct values are shown in Table A.3. A rut defect score of 10 indicates a pavement with only minor rutting.

Table A.1 Flexible Pavement Distress Coding Form

**FLORIDA DEPARTMENT OF TRANSPORTATION
1995 FLEXIBLE PAVEMENT CONDITION SURVEY -- TEAM 3**

Table A.2 Numerical Deductions for Cracking Method

CONFINED TO WHEELPATHS (CW)

PERCENT OF PAVT AREA AFFECTED BY CRACKING	PREDOMINATE CRACKING CLASS					
	I B CRACKING		II CRACKING		III CRACKING	
	CODE	DEDUCT	CODE	DEDUCT	CODE	DEDUCT
00 - 05	A	0.0	E	0.5	I	1.0
06 - 25	B	1.0	F	2.0	J	2.5
26 - 50	C	2.0	G	3.0	K	4.5
51 +	D	3.5	H	5.0	L	7.0

OUTSIDE OF WHEELPATHS (CO)

PERCENT OF PAVT AREA AFFECTED BY CRACKING	PREDOMINATE CRACKING CLASS					
	I B CRACKING		II CRACKING		III CRACKING	
	CODE	DEDUCT	CODE	DEDUCT	CODE	DEDUCT
00 - 05	A	0.0	E	0.0	I	0.0
06 - 25	B	0.5	F	1.0	J	1.0
26 - 50	C	1.0	G	1.5	K	2.0
51 +	D	1.5	H	2.0	L	3.0

NOTE: PERCENTAGES FOR CW AND CO WILL BE ESTIMATED SEPARATELY.
EACH REPRESENTING 100% OF ITS RESPECTIVE AREA.

CRACKING CLASSES CAN NOT BE COMBINED. ONLY THE PREDOMINATE
TYPE OF CRACKING PRESENT WILL BE CODED.

CRACKING DEFECT RATING = 10 - (CW + CO).

Table A.3 Ultrasonic and Manual Rutting Deduct Points

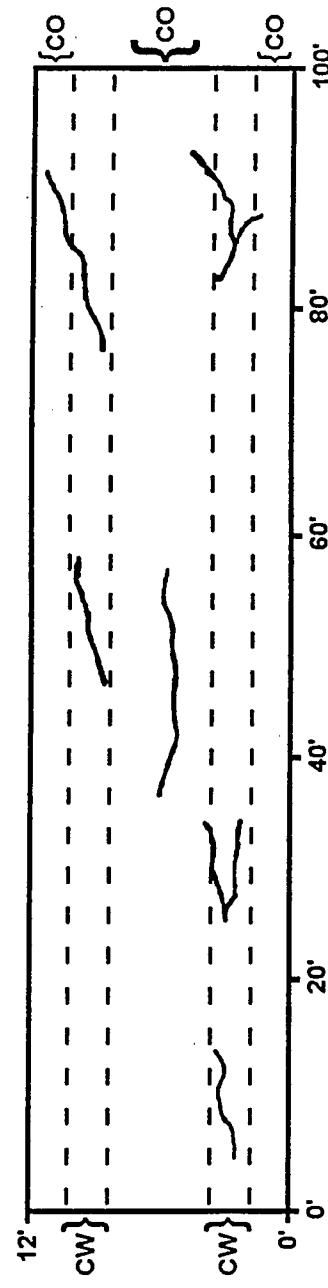
ULTRASONIC RUTTING DEDUCT POINTS

RUT DEPTH INCHES	RUT DEPTH MM	RANGE INCHES	RANGE MM	DEFECT POINTS	CODE VALUE
0	0	0.00 - 0.06	0.00 - 1.59	00	00
1/8	3.18	0.07 - 0.19	1.60 - 4.76	01	01
1/4	6.35	0.20 - 0.31	4.77 - 7.94	02	02
3/8	9.53	0.32 - 0.44	7.95 - 11.11	03	03
1/2	12.70	0.45 - 0.56	11.12 - 14.29	04	04
5/8	15.88	0.57 - 0.69	14.30 - 17.46	05	05
3/4	19.05	0.70 - 0.81	17.47 - 20.64	06	06
7/8	22.23	0.82 - 0.94	20.65 - 23.81	07	07
1	25.40	0.95 - 1.06	23.82 - 26.99	08	08
1 1/8	28.58	1.07 - 1.19	27.00 - 30.16	09	09
1 1/4 +	31.75	1.20 +	30.17 +	10	10

Manual Rutting Deduct Points

RUT DEPTH (IN)	RUT DEPTH MM	DEFECT POINTS	CODE VALUE
0	0	0	00
1/8	3.18	01	01
1/4	6.35	02	02
3/8	9.35	03	03
1/2	12.70	04	04
5/8	15.88	05	05
3/4	19.05	06	06
7/8	22.23	07	07
1	25.40	08	08
1 1/8	28.58	09	09
1 1/4+	31.75	10	10

Figure A.1a Class IB Cracking Estimates



AREA DIMENSIONS

$$CW = 56 \text{ ft. } (17.07\text{m}) \times 1 \text{ ft. (.30m)} = 56 \text{ sq. ft. } (5.20\text{m}^2)$$

$$+ 400 \text{ sq. ft. } (37.16\text{m}^2) = 14\%$$

$$CO = 30 \text{ ft. } (9.14\text{m}) \times 1 \text{ ft. (.30m)} = 30 \text{ sq. ft. } (2.79\text{m}^2)$$

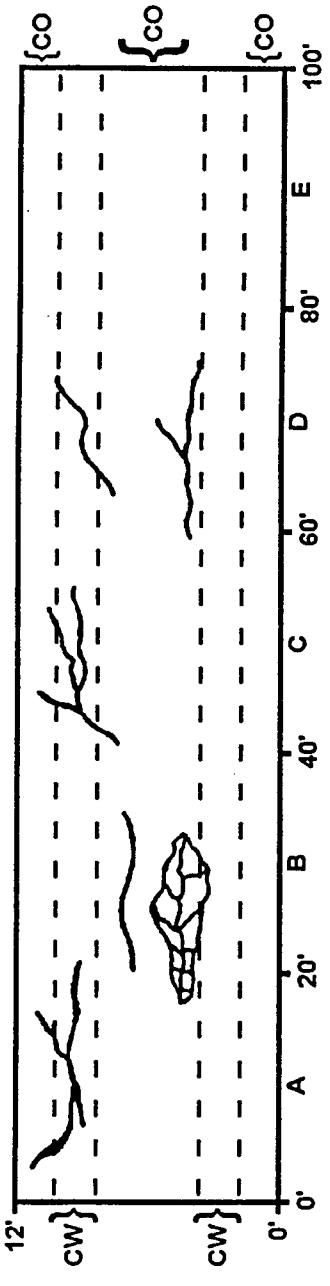
$$+ 800 \text{ sq. ft. } (74.32\text{m}^2) = 4\%$$

NOTE: CW = In Wheelpath

CO = Out of Wheelpath

Single Cracks considered 1 ft. (.30 m) in width
 Alligator Cracks considered as affected area
 Block Cracks considered 1 ft. (.30 m) in width

Figure A.1b Class II Cracking Estimates



AREA DIMENSIONS

CW A = 21 sq. ft. (1.95m^2)

B = 30 sq. ft. (2.79m^2)

C = 14 sq. ft. (1.30m^2)

D = 16 sq. ft. (1.49m^2)

E = 20 sq. ft. (1.86m^2)

TOTAL = 101 sq. ft. (9.39m^2)

or 25% of surface area
or 4% of surface area

CO A = 4 sq. ft. (0.37m^2)

B = 15 sq. ft. (1.39m^2)

C = 5 sq. ft. (0.46m^2)

D = 3 sq. ft. (0.28m^2)

E = 3 sq. ft. (0.28m^2)

TOTAL = 30 sq. ft. (2.78m^2)
or 4% of surface area

NOTE: CW = In Wheelpath

CO = Out of Wheelpath

Single Cracks considered 1 ft. (.30 m) in width
Alligator Cracks considered as affected area
Block Cracks considered 1 ft. (.30 m) in width

Figure A.1c Class III Cracking Estimates

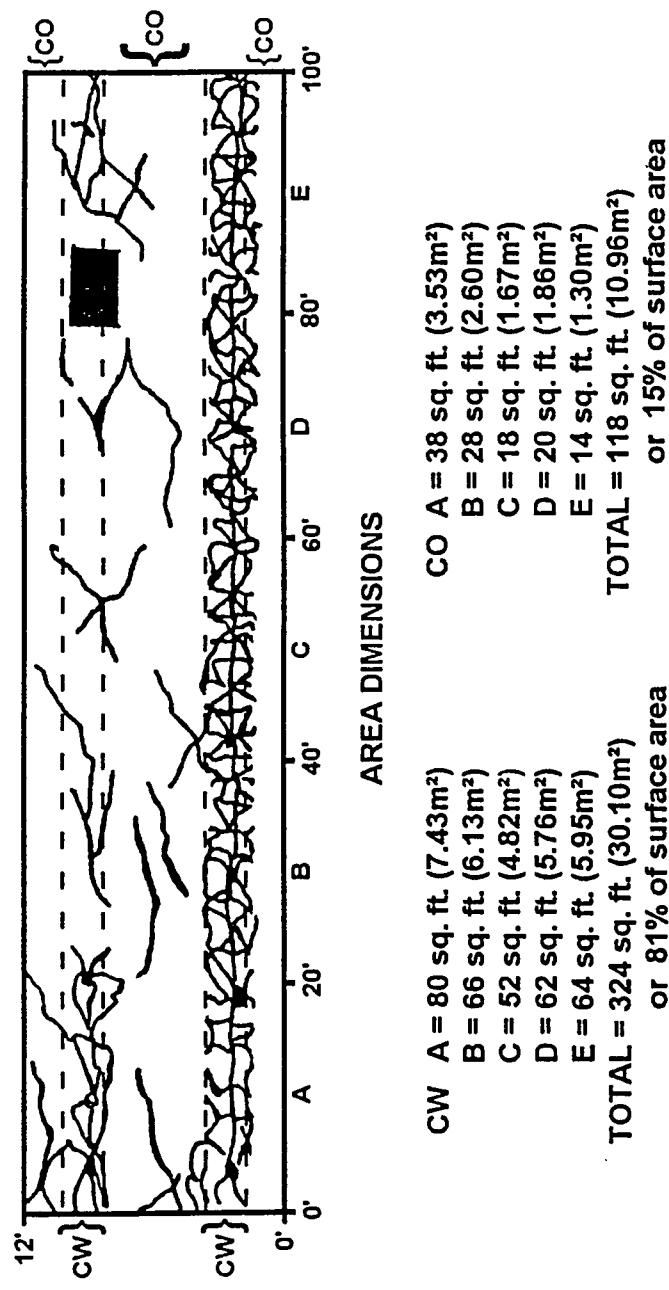


Figure A.2a Classification for IB Cracking

**CLASSIFICATION FOR CLASS 1B CRACKING
PAVEMENT CONDITION SURVEY
FLEXIBLE PAVEMENT**

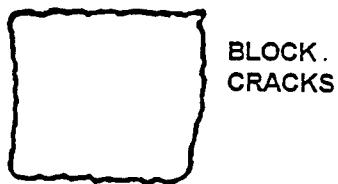
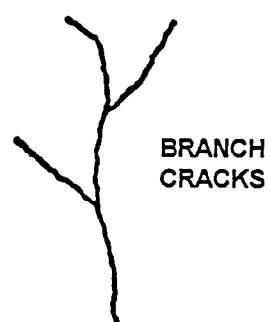
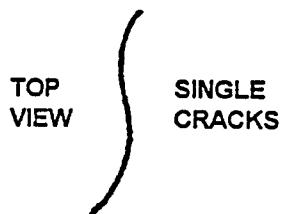
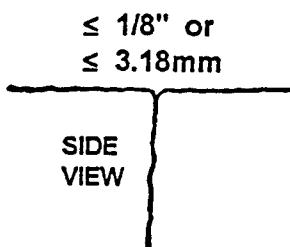


Figure A.2b Classification for II Cracking

**CLASSIFICATION FOR CLASS II CRACKING
PAVEMENT CONDITION SURVEY
FLEXIBLE PAVEMENT**

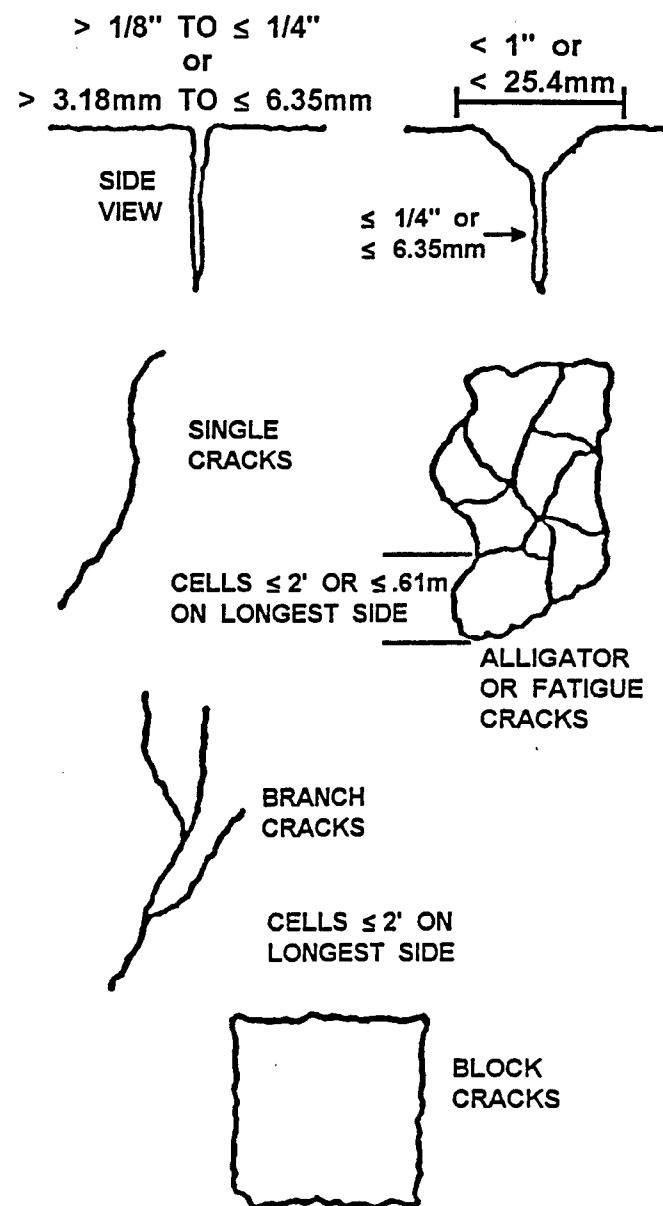


Figure A.2c Classification for III Cracking

**CLASSIFICATION FOR CLASS III CRACKING
PAVEMENT CONDITION SURVEY
FLEXIBLE PAVEMENT**

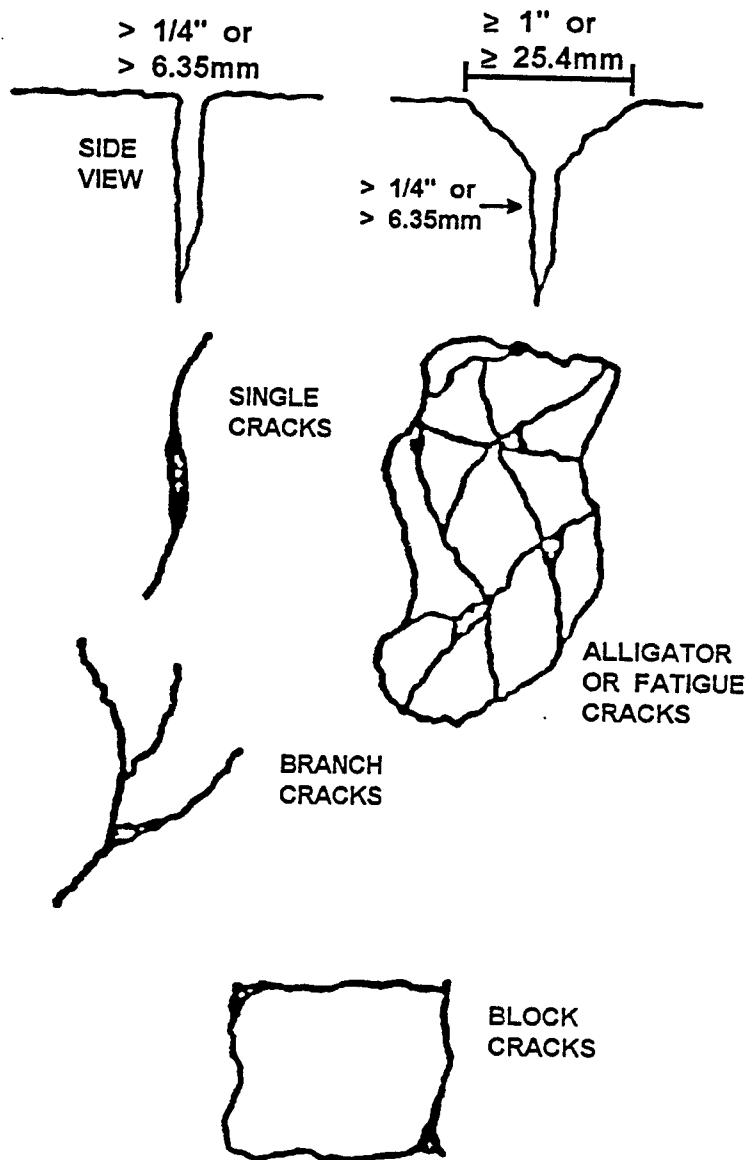
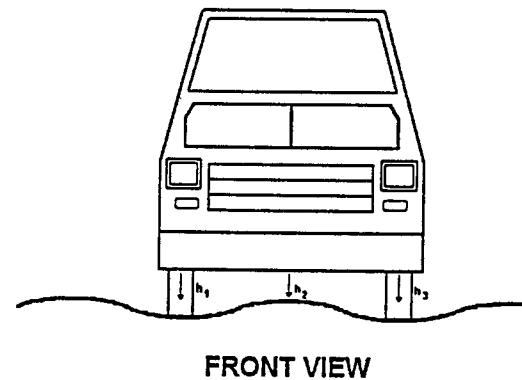


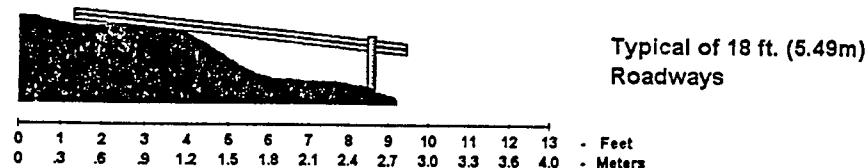
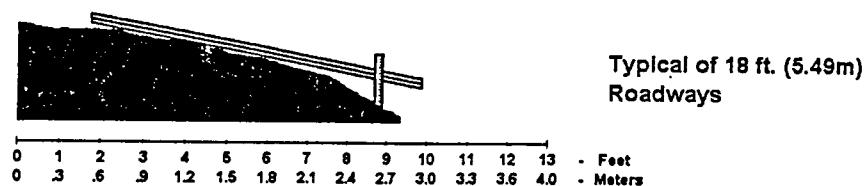
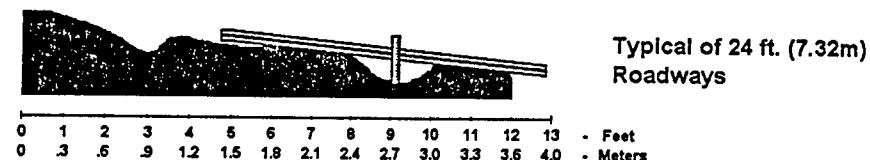
Figure A.3 Manual Rut Depth Methods

ROAD PROFILER



FRONT VIEW

METHOD FOR MEASURING TYPICAL ROADWAY RUTTING



APPENDIX B

PAVEMENT CONDITION DATA USED FOR CURVE DEVELOPMENT

Table B Pavement Condition Data Used for Performance Curve Development

RDWYID	RDWSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
01010000	R	1	1	1	0.491	4.980	1978	1	8.3	8.4034
01010000	R	1	1	1	0.491	4.980	1979	2	8.3	8.3301
01010000	R	1	1	1	0.491	4.980	1981	4	8.8	8.2435
01010000	R	1	1	1	0.491	4.980	1982	5	8.0	8.2206
01010000	R	1	1	1	0.491	4.980	1983	6	8.0	8.2049
01010000	R	1	1	1	0.491	4.980	1986	9	8.0	8.1530
01010000	R	1	1	1	0.491	4.980	1987	10	8.0	8.1181
01010000	R	1	1	1	0.491	4.980	1988	11	8.0	8.0664
01010000	R	1	1	1	0.491	4.980	1989	12	8.0	7.9931
01010000	R	1	1	1	0.491	4.980	1990	13	8.0	7.8934
01010000	R	1	1	1	0.491	4.980	1991	14	8.0	7.7625
01010000	R	1	1	1	0.491	4.980	1992	15	7.0	7.5956
01010000	R	1	1	1	0.491	4.980	1993	16		7.3879
01010000	R	1	1	1	0.491	4.980	1994	17	7.0	7.1346
01010000	L	1	1	1	5.000	6.800	1978	3	8.3	9.0128
01010000	L	1	1	1	5.000	6.800	1979	4	8.4	8.7002
01010000	L	1	1	1	5.000	6.800	1981	6	8.7	8.4122
01010000	L	1	1	1	5.000	6.800	1982	7	8.4	8.3978
01010000	L	1	1	1	5.000	6.800	1983	8	8.0	8.3900
01010000	L	1	1	1	5.000	6.800	1986	11	8.5	8.3594
01010000	L	1	1	1	5.000	6.800	1987	12	8.4	8.3306
01010000	L	1	1	1	5.000	6.800	1988	13	8.6	8.3186
01010000	L	1	1	1	5.000	6.800	1989	14	8.6	8.3096
01010000	L	1	1	1	5.000	6.800	1990	15	8.4	8.2484
01010000	L	1	1	1	5.000	6.800	1991	16	8.1	8.2178
01010000	L	1	1	1	5.000	6.800	1992	17	8.0	8.1854
01010000	L	1	1	1	5.000	6.800	1993	18	8.0	7.9778
01010000	L	1	1	1	5.000	6.800	1994	19	8.1	7.6832
01010000	L	1	1	1	8.000	8.685	1981	1	8.9	8.8195
01010000	L	1	1	1	8.000	8.685	1982	2	8.6	8.8043
01010000	L	1	1	1	8.000	8.685	1983	3	8.8	8.7285
01010000	L	1	1	1	8.000	8.685	1987	7	8.0	8.2143
01010000	L	1	1	1	8.000	8.685	1988	8	8.0	7.8815
01010000	L	1	1	1	8.000	8.685	1989	9	8.0	7.4701
01010000	L	1	1	1	8.000	8.685	1990	10	7.0	6.9771
01010000	L	1	1	1	8.000	8.685	1991	11	6.0	6.3995
01010000	L	1	1	1	8.000	8.685	1992	12	6.0	5.7343
01010000	L	1	1	1	8.000	8.685	1993	13	4.5	4.9785
01010000	L	1	1	1	8.000	8.685	1994	14	4.5	4.1291
01010000	L	1	1	1	11.182	11.762	1976	1	9.3	9.0249
01010000	L	1	1	1	11.182	11.762	1977	2	8.6	8.9376
01010000	L	1	1	1	11.182	11.762	1978	3	8.8	8.8407
01010000	L	1	1	1	11.182	11.762	1982	7	8.0	8.1411
01010000	L	1	1	1	11.182	11.762	1983	8	8.0	7.8342
01010000	L	1	1	1	11.182	11.762	1984	9	8.0	7.4529
01010000	L	1	1	1	11.182	11.762	1985	10	7.0	6.9864
01010000	L	1	1	1	11.182	11.762	1986	11	6.0	6.4239
01010000	L	1	1	1	11.182	11.762	1987	12	6.0	5.7546
01010000	L	1	1	1	11.182	11.762	1988	13	4.5	4.9677
01010000	L	1	1	1	11.182	11.762	1989	14	4.5	4.0524
01075000	R	1	4	1	0.000	1.067	1981	1	8.9	8.8838
01075000	R	1	4	1	0.000	1.067	1982	2	8.7	8.7548
01075000	R	1	4	1	0.000	1.067	1983	3	8.6	8.5468
01075000	R	1	4	1	0.000	1.067	1986	6	8.0	8.0128
01075000	R	1	4	1	0.000	1.067	1987	7	8.0	7.9448

Table B – Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
01075000	R	1	4	1	0.000	1.067	1988	8	8.0	7.9178
01075000	R	1	4	1	0.000	1.067	1989	9	8.0	7.8910
01075000	L	1	4	1	8.503	9.047	1982	1	8.7	9.0740
01075000	L	1	4	1	8.503	9.047	1983	2	8.6	8.8675
01075000	L	1	4	1	8.503	9.047	1986	5	8.7	8.7844
01075000	L	1	4	1	8.503	9.047	1987	6	8.5	8.7235
01075000	L	1	4	1	8.503	9.047	1988	7	8.9	8.5400
01075000	L	1	4	1	8.503	9.047	1989	8	8.9	8.1703
01075000	L	1	4	7	9.047	15.760	1982	1	8.6	8.6000
01075000	L	1	4	1	9.047	15.760	1983	2	8.5	8.4999
01075000	L	1	4	1	9.047	15.760	1986	5	8.0	7.9992
01075000	L	1	4	1	9.047	15.760	1987	6	8.0	7.7655
01075000	L	1	4	1	9.047	15.760	1988	7	8.0	7.4984
01075000	L	1	4	1	9.047	15.760	1989	8	8.0	7.1979
03010000	C	1	1	1	29.505	30.127	1981	1	8.0	9.0288
03010000	C	1	1	1	29.505	30.127	1982	2	8.0	8.8504
03010000	C	1	1	1	29.505	30.127	1983	3	8.6	8.7432
03010000	C	1	1	1	29.505	30.127	1986	6	8.6	8.6328
03010000	C	1	1	1	29.505	30.127	1987	7	8.5	8.5944
03010000	C	1	1	1	29.505	30.127	1988	8	8.5	8.5192
03010000	C	1	1	1	29.505	30.127	1989	9	8.5	8.3856
03010000	C	1	1	1	29.505	30.127	1990	10	8.5	8.1720
03010000	C	1	1	1	29.505	30.127	1991	11	7.5	7.8568
03010000	C	1	1	1	29.505	30.127	1992	12	7.0	7.4184
03010000	C	1	1	1	29.505	30.127	1993	13	7.0	6.8352
03010000	C	1	1	1	29.505	30.127	1994	14	7.0	6.0856
03010000	C	1	1	1	36.873	37.455	1981	1	9.0	9.1057
03010000	C	1	1	1	36.873	37.455	1982	2	8.8	8.7001
03010000	C	1	1	1	36.873	37.455	1983	3	8.6	8.6371
03010000	C	1	1	1	36.873	37.455	1986	6	8.5	8.6353
03010000	C	1	1	1	36.873	37.455	1987	7	8.5	8.5697
03010000	C	1	1	1	36.873	37.455	1988	8	8.5	8.5097
03010000	C	1	1	1	36.873	37.455	1989	9	8.5	8.4983
03010000	C	1	1	1	36.873	37.455	1990	10	8.5	8.2057
03010000	C	1	1	1	36.873	37.455	1991	11	8.0	7.6687
03010000	C	1	1	1	36.873	37.455	1992	12	6.0	6.8441
03010000	C	1	1	1	36.873	37.455	1993	13	6.0	5.6773
03010000	C	1	1	1	36.873	37.455	1994	14	4.0	4.1137
03175000	L	1	4	7	50.094	52.682	1990	1	9.4	9.4372
03175000	L	1	4	1	50.094	52.682	1991	2	8.8	8.8540
03175000	L	1	4	1	50.094	52.682	1992	3	8.5	8.7240
03175000	L	1	4	1	50.094	52.682	1993	4	9.0	8.6518
03175000	L	1	4	1	50.094	52.682	1994	5	8.2	8.2420
04040000	C	1	1	7	15.486	16.928	1982	1	8.9	9.0918
04040000	C	1	1	1	15.486	16.928	1983	2	8.6	8.7618
04040000	C	1	1	1	15.486	16.928	1986	5	8.0	8.2770
04040000	C	1	1	1	15.486	16.928	1987	6	8.0	8.2238
04040000	C	1	1	1	15.486	16.928	1988	7	8.0	8.1948
04040000	C	1	1	1	15.486	16.928	1989	8	8.0	8.1720
04040000	C	1	1	1	15.486	16.928	1990	9	8.0	8.1374
04040000	C	1	1	1	15.486	16.928	1991	10		8.0730
04040000	C	1	1	1	15.486	16.928	1992	11	8.0	7.9608
07060000	C	1	1	1	15.176	15.786	1987	1	8.4	8.3677

Table B – Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
07060000	C	1	1	1	15.176	15.786	1988	2	8.0	8.0791
07060000	C	1	1	1	15.176	15.786	1989	3	7.9	7.8779
07060000	C	1	1	1	15.176	15.786	1990	4	7.8	7.7401
07060000	C	1	1	1	15.176	15.786	1991	5		7.6417
07060000	C	1	1	1	15.176	15.786	1992	6	7.5	7.5587
07060000	C	1	1	1	15.176	15.786	1993	7	7.5	7.4671
08150000	L	7	4	1	0.000	3.800	1981	1	8.9	8.8781
08150000	L	7	4	1	0.000	3.800	1982	2	8.9	8.8384
08150000	L	7	4	1	0.000	3.800	1983	3	8.6	8.7675
08150000	L	7	4	1	0.000	3.800	1986	6	8.7	8.3976
08150000	L	7	4	1	0.000	3.800	1987	7	8.0	8.2319
08150000	L	7	4	1	0.000	3.800	1988	8	8.0	8.0500
08150000	L	7	4	1	0.000	3.800	1989	9	8.0	7.8549
08150000	L	7	4	1	0.000	3.800	1990	10	8.0	7.6496
08150000	L	7	4	1	0.000	3.800	1991	11	7.0	7.4371
08150000	L	7	4	1	0.000	3.800	1992	12	7.5	7.2204
08150000	R	7	4	1	0.000	3.846	1976	1	8.0	9.0284
08150000	R	7	4	1	0.000	3.846	1977	2	8.0	8.9903
08150000	R	7	4	1	0.000	3.846	1978	3	8.0	8.9799
08150000	R	7	4	1	0.000	3.846	1979	4	8.0	8.9771
08150000	R	7	4	1	0.000	3.846	1981	6	9.1	8.9766
08150000	R	7	4	1	0.000	3.846	1982	7	9.0	8.9618
08150000	R	7	4	1	0.000	3.846	1983	8	8.6	8.9171
08150000	R	7	4	1	0.000	3.846	1986	11	8.9	8.5214
08150000	R	7	4	1	0.000	3.846	1987	12	8.0	8.2683
08150000	R	7	4	1	0.000	3.846	1988	13	8.0	7.9376
08150000	R	7	4	1	0.000	3.846	1989	14	8.0	7.5191
08150000	R	7	4	1	0.000	3.846	1990	15	7.0	7.0026
08150000	L	7	4	7	7.080	10.776	1987	1	8.7	8.6356
08150000	L	7	4	1	7.080	10.776	1988	2	8.4	8.5447
08150000	L	7	4	1	7.080	10.776	1989	3	8.5	8.4794
08150000	L	7	4	1	7.080	10.776	1990	4	8.5	8.4061
08150000	L	7	4	1	7.080	10.776	1991	5	8.4	8.2912
08150000	L	7	4	1	7.080	10.776	1992	6	7.9	8.1011
08150000	L	7	4	1	7.080	10.776	1993	7	7.9	7.8022
10010000	R	7	1	7	20.012	20.890	1986	1	8.0	8.9604
10010000	R	7	1	1	20.012	20.890	1987	2	8.7	8.8259
10010000	R	7	1	1	20.012	20.890	1988	3	8.6	8.4542
10010000	R	7	1	1	20.012	20.890	1989	4	8.0	8.1159
10010000	R	7	1	1	20.012	20.890	1990	5	8.0	7.9112
10010000	R	7	1	1	20.012	20.890	1991	6	8.0	7.7699
10010000	R	7	1	1	20.012	20.890	1992	7	7.0	7.4514
10010000	R	7	1	1	20.012	20.890	1993	8	7.0	6.5447
10010000	R	7	1	1	20.012	20.890	1994	9	4.5	4.4684
10040000	R	7	1	1	7.604	8.123	1981	1	8.3	8.1682
10040000	R	7	1	1	7.604	8.123	1982	2	7.9	8.1351
10040000	R	7	1	1	7.604	8.123	1983	3	8.2	8.1174
10040000	R	7	1	1	7.604	8.123	1986	6		8.1027
10040000	R	7	1	1	7.604	8.123	1987	7	8.1	8.0926
10040000	R	7	1	1	7.604	8.123	1988	8	8.0	8.0709
10040000	R	7	1	1	7.604	8.123	1989	9	8.2	8.0322
10040000	R	7	1	1	7.604	8.123	1990	10		7.9711
10040000	R	7	1	1	7.604	8.123	1991	11	8.0	7.8822
10040000	R	7	1	1	7.604	8.123	1992	12	7.5	7.7601

Table B – Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
10040000	R	7	1	1	7.604	8.123	1993	13	7.6	7.5994
10040000	R	7	1	1	7.604	8.123	1994	14	7.5	7.3947
10040000	C	7	1	1	8.314	9.084	1979	1	8.1	8.5638
10040000	C	7	1	1	8.314	9.084	1981	3	8.0	8.3042
10040000	C	7	1	1	8.314	9.084	1982	4	8.0	8.2467
10040000	C	7	1	1	8.314	9.084	1983	5	8.0	8.2062
10040000	C	7	1	1	8.314	9.084	1986	8	8.0	7.9947
10040000	C	7	1	1	8.314	9.084	1987	9	8.0	7.8422
10040000	C	7	1	1	8.314	9.084	1989	11	8.0	7.6287
10040000	C	7	1	1	8.314	9.084	1990	12	7.0	6.9875
10040000	C	7	1	1	8.314	9.084	1991	13	7.5	6.5502
10040000	C	7	1	1	8.314	9.084	1992	14	7.0	6.0327
10040000	C	7	1	1	8.314	9.084	1993	15	6.5	5.4362
10040000	C	7	1	1	8.314	9.084	1994	16	6.5	4.7643
10075000	R	7	4	1	0.000	5.795	1983	2	8.6	8.3851
10075000	R	7	4	1	0.000	5.795	1986	5	8.0	8.1211
10075000	R	7	4	1	0.000	5.795	1987	6	8.0	8.1099
10075000	R	7	4	1	0.000	5.795	1988	7	8.0	8.0001
10075000	R	7	4	1	0.000	5.795	1989	8	8.0	7.7095
10075000	R	7	4	1	0.000	5.795	1990	9	7.0	7.1559
10075000	L	7	4	1	11.589	12.229	1982	1	8.7	8.6435
10075000	L	7	4	1	11.589	12.229	1983	2	8.5	8.5926
10075000	L	7	4	1	11.589	12.229	1986	5	8.3	8.4171
10075000	L	7	4	1	11.589	12.229	1987	6	8.7	8.1250
10075000	L	7	4	1	11.589	12.229	1988	7	7.0	6.7836
10075000	L	7	4	1	11.589	12.229	1989	8	7.0	7.6031
10110000	R	7	1	1	12.613	16.447	1978	1	10.0	9.6113
10110000	R	7	1	1	12.613	16.447	1979	2	7.8	8.6600
10110000	R	7	1	1	12.613	16.447	1981	4	8.0	7.6010
10110000	R	7	1	1	12.613	16.447	1982	5	8.0	7.3865
10110000	R	7	1	1	12.613	16.447	1983	6	7.0	7.3108
10110000	R	7	1	1	12.613	16.447	1986	9	7.0	7.2804
10110000	R	7	1	1	12.613	16.447	1987	10	7.0	7.1780
10110000	R	7	1	1	12.613	16.447	1988	11	7.0	7.1453
10110000	R	7	1	1	12.613	16.447	1989	12	7.0	6.7810
10110000	R	7	1	1	12.613	16.447	1990	13	7.0	6.1817
10110000	R	7	1	1	12.613	16.447	1991	14	4.5	5.2940
10110000	R	7	1	1	12.613	16.447	1992	15	4.0	4.0645
10190000	L	7	4	4	12.868	14.088	1983	1	7.3	7.5123
10190000	L	7	4	4	12.868	14.088	1986	4	7.0	7.1991
10190000	L	7	4	4	12.868	14.088	1987	5	7.1	7.1839
10190000	L	7	4	4	12.868	14.088	1988	6	7.1	7.1673
10190000	L	7	4	4	12.868	14.088	1989	7	7.1	7.1217
10190000	L	7	4	4	12.868	14.088	1990	8	7.1	7.0195
10190000	L	7	4	4	12.868	14.088	1991	9	7.1	6.8331
10190000	L	7	4	4	12.868	14.088	1992	10	7.2	6.5349
10190000	L	7	4	4	12.868	14.088	1993	11	7.2	6.0973
11010000	C	5	1	7	0.000	1.035	1983	1	8.6	8.9992
11010000	C	5	1	1	0.000	1.035	1986	4	8.5	8.5108
11010000	C	5	1	1	0.000	1.035	1987	5	9.0	8.5022
11010000	C	5	1	1	0.000	1.035	1988	6	8.9	8.5024
11010000	C	5	1	1	0.000	1.035	1989	7	8.7	8.4868

Table B -- Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
11010000	C	5	1	1	0.000	1.035	1990	8	8.4	8.4280
11010000	C	5	1	1	0.000	1.035	1991	9	8.0	8.3128
11010000	C	5	1	1	0.000	1.035	1992	10	8.0	8.1334
11010000	C	5	1	1	0.000	1.035	1993	11	8.0	7.8892
11010000	C	5	1	1	0.000	1.035	1994	12	8.0	7.5868
11040000	L	5	1	1	4.543	5.814	1981	1	8.5	10.0000
11040000	L	5	1	1	4.543	5.814	1982	2	8.6	9.4962
11040000	L	5	1	1	4.543	5.814	1983	3	8.0	8.9860
11040000	L	5	1	1	4.543	5.814	1986	6	8.0	8.1490
11040000	L	5	1	1	4.543	5.814	1987	7	8.0	8.0392
11040000	L	5	1	1	4.543	5.814	1988	8	8.0	7.9830
11040000	L	5	1	1	4.543	5.814	1989	9	8.0	7.9618
11040000	L	5	1	1	4.543	5.814	1990	10	8.0	7.9570
11040000	L	5	1	1	4.543	5.814	1991	11	8.0	7.9500
11040000	L	5	1	1	4.543	5.814	1992	12	7.5	7.9222
11040000	L	5	1	1	4.543	5.814	1993	13	7.5	7.8550
11040000	R	5	1	1	6.038	7.060	1978	1	8.3	8.3671
11040000	R	5	1	1	6.038	7.060	1979	2	8.4	8.2479
11040000	R	5	1	1	6.038	7.060	1981	4	8.0	8.0983
11040000	R	5	1	1	6.038	7.060	1982	5	8.0	8.0475
11040000	R	5	1	1	6.038	7.060	1983	6	8.0	7.9991
11040000	R	5	1	1	6.038	7.060	1986	9	8.0	7.7663
11040000	R	5	1	1	6.038	7.060	1987	10	7.5	7.6255
11040000	R	5	1	1	6.038	7.060	1988	11	7.5	7.4361
11040000	R	5	1	1	6.038	7.060	1989	12	7.0	7.1879
11040000	R	5	1	1	6.038	7.060	1990	13	7.0	6.8707
11100000	R	5	1	7	2.247	3.794	1983	1	8.7	8.7690
11100000	R	5	1	1	2.247	3.794	1986	4	8.0	7.8357
11100000	R	5	1	1	2.247	3.794	1987	5	8.0	7.6242
11100000	R	5	1	1	2.247	3.794	1988	6	7.0	7.4415
11100000	R	5	1	1	2.247	3.794	1989	7	7.0	7.2750
11100000	R	5	1	1	2.247	3.794	1990	8	7.0	7.1121
11100000	R	5	1	1	2.247	3.794	1991	9	7.0	6.9402
11100000	R	5	1	1	2.247	3.794	1992	10	7.0	6.7467
11100000	R	5	1	1	2.247	3.794	1993	11	6.5	6.5190
11100000	R	5	1	1	2.247	3.794	1994	12	6.0	6.2445
11130000	C	5	1	1	2.701	4.810	1983	1	7.0	7.5113
11130000	C	5	1	1	2.701	4.810	1986	4	7.0	7.3229
11130000	C	5	1	1	2.701	4.810	1987	5	7.0	7.2861
11130000	C	5	1	1	2.701	4.810	1988	6	7.0	7.2443
11130000	C	5	1	1	2.701	4.810	1989	7	7.0	7.1867
11130000	C	5	1	1	2.701	4.810	1990	8	7.0	7.1025
11130000	C	5	1	1	2.701	4.810	1991	9	7.0	6.9809
11130000	C	5	1	1	2.701	4.810	1992	10	7.0	6.8111
11130000	C	5	1	1	2.701	4.810	1993	11	7.0	6.5823
11130000	C	5	1	1	2.701	4.810	1994	12	6.0	6.2837
11200000	L	5	1	7	4.234	5.134	1983	1	8.6	8.4877
11200000	L	5	1	1	4.234	5.134	1986	4	8.0	8.4313
11200000	L	5	1	1	4.234	5.134	1987	5	8.0	7.9637
11200000	L	5	1	1	4.234	5.134	1988	6	7.0	7.2957
11200000	L	5	1	1	4.234	5.134	1989	7	7.0	6.4417
11200000	L	5	1	1	4.234	5.134	1990	8	7.0	5.4161
11200000	L	5	1	1	4.234	5.134	1991	9	2.5	4.2333
11200000	L	5	1	1	4.234	5.134	1992	10	2.5	2.9077
11200000	L	5	1	1	4.234	5.134	1993	11	2.0	1.4537

Table B -- Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
12010000	L	1	1	1	0.000	1.023	1982	1	8.3	8.2727
12010000	L	1	1	1	0.000	1.023	1983	2	7.0	8.0993
12010000	L	1	1	1	0.000	1.023	1986	5	8.0	7.8467
12010000	L	1	1	1	0.000	1.023	1987	6	8.0	7.8117
12010000	L	1	1	1	0.000	1.023	1988	7	8.0	7.7813
12010000	L	1	1	1	0.000	1.023	1989	8	8.0	7.7435
12010000	L	1	1	1	0.000	1.023	1990	9	8.0	7.6863
12010000	L	1	1	1	0.000	1.023	1991	10	7.0	7.5977
12010000	L	1	1	1	0.000	1.023	1992	11	7.0	7.4657
12010000	L	1	1	1	0.000	1.023	1993	12	7.6	7.2783
12010000	L	1	1	1	0.000	1.023	1994	13	7.6	7.0235
12010000	R	1	1	1	1.727	4.321	1980	1	8.2	8.7782
12010000	R	1	1	1	1.727	4.321	1981	2	8.4	8.5048
12010000	R	1	1	1	1.727	4.321	1982	3	8.1	8.2998
12010000	R	1	1	1	1.727	4.321	1983	4	8.0	8.1500
12010000	R	1	1	1	1.727	4.321	1986	7	8.0	7.8998
12010000	R	1	1	1	1.727	4.321	1987	8	8.0	7.8388
12010000	R	1	1	1	1.727	4.321	1988	9	8.0	7.7670
12010000	R	1	1	1	1.727	4.321	1989	10	8.0	7.6712
12010000	R	1	1	1	1.727	4.321	1990	11	7.0	7.5382
12010000	R	1	1	1	1.727	4.321	1991	12	7.0	7.3548
12010000	R	1	1	1	1.727	4.321	1992	13	7.8	7.1078
12010000	R	1	1	1	1.727	4.321	1993	14	7.0	6.7840
12010000	R	1	1	1	1.727	4.321	1994	15	7.6	6.3702
12075000	L	1	4	1	8.639	12.670	1981	1	9.1	9.1234
12075000	L	1	4	1	8.639	12.670	1982	2	8.9	8.9607
12075000	L	1	4	1	8.639	12.670	1983	3	9.0	8.8168
12075000	L	1	4	1	8.639	12.670	1986	6	8.0	8.2939
12075000	L	1	4	1	8.639	12.670	1987	7	8.0	8.0212
12075000	L	1	4	1	8.639	12.670	1988	8	8.0	7.6653
12075000	L	1	4	1	8.639	12.670	1989	9	7.0	7.2058
12075000	R	1	4	7	13.940	16.414	1991	1	8.4	9.0286
12075000	R	1	4	1	13.940	16.414	1992	2	8.8	8.3860
12075000	R	1	4	1	13.940	16.414	1993	3	9.1	8.1724
12075000	R	1	4	1	13.940	16.414	1994	4	8.8	7.8880
13020000	L	1	1	1	3.560	4.581	1981	1	8.4	8.5332
13020000	L	1	1	1	3.560	4.581	1982	2	8.5	8.3115
13020000	L	1	1	1	3.560	4.581	1983	3	8.1	8.1724
13020000	L	1	1	1	3.560	4.581	1986	6	8.0	8.0467
13020000	L	1	1	1	3.560	4.581	1987	7	8.0	8.0340
13020000	L	1	1	1	3.560	4.581	1988	8	8.0	8.0019
13020000	L	1	1	1	3.560	4.581	1989	9	8.0	7.9300
13020000	L	1	1	1	3.560	4.581	1990	10	8.0	7.7979
13020000	L	1	1	1	3.560	4.581	1991	11	8.0	7.5852
13020000	L	1	1	1	3.560	4.581	1992	12	7.8	7.2715
13020000	L	1	1	1	3.560	4.581	1993	13	6.5	6.8364
13030000	L	1	1	1	4.740	5.402	1986	1	8.8	8.8475
13030000	L	1	1	1	4.740	5.402	1987	2	8.9	8.8379
13030000	L	1	1	1	4.740	5.402	1988	3	8.9	8.8223
13030000	L	1	1	1	4.740	5.402	1989	4	8.7	8.7905
13030000	L	1	1	1	4.740	5.402	1990	5	8.7	8.7323
13030000	L	1	1	1	4.740	5.402	1991	6	8.0	8.6375
13030000	L	1	1	1	4.740	5.402	1992	7	8.5	8.4959
13030000	L	1	1	1	4.740	5.402	1993	8	8.4	8.2973
13030000	L	1	1	1	4.740	5.402	1994	9	8.4	8.0315

Table B -- Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
13060000	C	1	1	1	15.003	19.268	1987	1	9.0	8.9536
13060000	C	1	1	1	15.003	19.268	1988	2	8.8	8.9214
13060000	C	1	1	1	15.003	19.268	1989	3	8.9	8.8300
13060000	C	1	1	1	15.003	19.268	1990	4	9.0	8.6800
13060000	C	1	1	1	15.003	19.268	1991	5	8.6	8.4720
13060000	C	1	1	1	15.003	19.268	1992	6	8.0	8.2066
13060000	C	1	1	1	15.003	19.268	1993	7	8.0	7.8844
13060000	C	1	1	1	15.003	19.268	1994	8	8.0	7.5060
13075000	R	1	4	7	15.723	17.769	1982	1	8.9	8.9626
13075000	R	1	4	1	15.723	17.769	1983	2	8.5	8.3686
13075000	R	1	4	1	15.723	17.769	1986	5	8.0	8.0590
13075000	R	1	4	1	15.723	17.769	1987	6	8.0	7.9666
13075000	R	1	4	1	15.723	17.769	1988	7	8.0	7.6396
13075000	R	1	4	1	15.723	17.769	1989	8	7.0	6.9340
13075000	L	1	4	7	17.769	20.571	1982	1	8.8	8.8605
13075000	L	1	4	1	17.769	20.571	1983	2	8.4	8.2882
13075000	L	1	4	1	17.769	20.571	1986	5	8.0	8.1097
13075000	L	1	4	1	17.769	20.571	1987	6	8.0	8.0630
13075000	L	1	4	1	17.769	20.571	1988	7	8.0	7.7727
13075000	L	1	4	1	17.769	20.571	1989	8	7.0	7.0888
13080000	C	1	1	1	0.000	4.007	1979	1	10.0	9.5619
13080000	C	1	1	1	0.000	4.007	1981	3	8.0	8.6047
13080000	C	1	1	1	0.000	4.007	1982	4	8.0	8.2764
13080000	C	1	1	1	0.000	4.007	1983	5	8.0	8.0195
13080000	C	1	1	1	0.000	4.007	1986	8	8.0	7.4612
13080000	C	1	1	1	0.000	4.007	1987	9	7.5	7.2739
13080000	C	1	1	1	0.000	4.007	1988	10	7.0	7.0500
13080000	C	1	1	1	0.000	4.007	1989	11	7.0	6.7679
13080000	C	1	1	1	0.000	4.007	1990	12	7.0	6.4060
13080000	C	1	1	1	0.000	4.007	1991	13	5.5	5.9427
13080000	C	1	1	1	0.000	4.007	1992	14	4.5	5.3564
13080000	C	1	1	1	0.000	4.007	1993	15	4.5	4.6255
13080000	C	1	1	1	0.000	4.007	1994	16	4.5	3.7284
13150000	R	1	1	1	5.068	6.578	1986	1	9.0	8.9753
13150000	R	1	1	1	5.068	6.578	1987	2	8.1	8.5429
13150000	R	1	1	1	5.068	6.578	1988	3	8.2	8.3089
13150000	R	1	1	1	5.068	6.578	1989	4	8.0	8.2013
13150000	R	1	1	1	5.068	6.578	1990	5	8.0	8.1481
13150000	R	1	1	1	5.068	6.578	1991	6	8.0	8.0773
13150000	R	1	1	1	5.068	6.578	1992	7	8.5	7.9169
13150000	R	1	1	1	5.068	6.578	1993	8	7.7	7.5949
13150000	R	1	1	1	5.068	6.578	1994	9	8.3	7.0393
13150000	C	1	1	1	6.579	7.090	1986	1	8.9	8.6778
13150000	C	1	1	1	6.579	7.090	1987	2	8.1	8.4263
13150000	C	1	1	1	6.579	7.090	1988	3	7.9	8.2266
13150000	C	1	1	1	6.579	7.090	1989	4	8.6	8.0661
13150000	C	1	1	1	6.579	7.090	1990	5	8.0	7.9322
13150000	C	1	1	1	6.579	7.090	1991	6	7.7	7.8123
13150000	C	1	1	1	6.579	7.090	1992	7	7.8	7.6938
13150000	C	1	1	1	6.579	7.090	1993	8	7.2	7.5641
13150000	C	1	1	1	6.579	7.090	1994	9	7.6	7.4106
14030000	L	7	1	1	0.990	3.037	1977	2	8.1	8.8243
14030000	L	7	1	1	0.990	3.037	1978	3	8.0	8.5204

Table B – Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
14030000	L	7	1	1	0.990	3.037	1979	4		8.2853
14030000	L	7	1	1	0.990	3.037	1981	6		7.9855
14030000	L	7	1	1	0.990	3.037	1982	7	8.3	7.9028
14030000	L	7	1	1	0.990	3.037	1983	8	8.1	7.8529
14030000	L	7	1	1	0.990	3.037	1986	11	8.0	7.8100
14030000	L	7	1	1	0.990	3.037	1987	12	8.0	7.8013
14030000	L	7	1	1	0.990	3.037	1988	13	8.0	7.7804
14030000	L	7	1	1	0.990	3.037	1989	14	8.0	7.7383
14030000	L	7	1	1	0.990	3.037	1990	15	8.0	7.6660
14030000	L	7	1	1	0.990	3.037	1991	16	7.0	7.5545
14030000	L	7	1	1	0.990	3.037	1992	17	7.7	7.3948
14030000	L	7	1	1	0.990	3.037	1993	18	7.5	7.1779
14030000	L	7	1	1	0.990	3.037	1994	19	6.5	6.8948
14030000	L	7	1	1	3.037	4.190	1986	1	8.0	8.5712
14030000	L	7	1	1	3.037	4.190	1987	2	8.0	8.2967
14030000	L	7	1	1	3.037	4.190	1988	3	8.0	8.1380
14030000	L	7	1	1	3.037	4.190	1989	4	8.0	8.0495
14030000	L	7	1	1	3.037	4.190	1990	5	8.0	7.9856
14030000	L	7	1	1	3.037	4.190	1991	6	7.0	7.9007
14030000	L	7	1	1	3.037	4.190	1992	7	7.7	7.7492
14030000	L	7	1	1	3.037	4.190	1993	8	7.5	7.4855
14030000	L	7	1	1	3.037	4.190	1994	9	6.5	7.0640
14040000	C	7	1	1	0.000	1.263	1981	1	10.0	9.3137
14040000	C	7	1	1	0.000	1.263	1982	2	7.8	8.7668
14040000	C	7	1	1	0.000	1.263	1983	3	8.2	8.3531
14040000	C	7	1	1	0.000	1.263	1986	6	8.0	7.7192
14040000	C	7	1	1	0.000	1.263	1987	7	8.0	7.6463
14040000	C	7	1	1	0.000	1.263	1988	8	8.0	7.6106
14040000	C	7	1	1	0.000	1.263	1989	9	8.0	7.5929
14040000	C	7	1	1	0.000	1.263	1990	10	8.0	7.5740
14040000	C	7	1	1	0.000	1.263	1991	11	8.0	7.5347
14040000	C	7	1	1	0.000	1.263	1992	12	8.0	7.4558
14040000	C	7	1	1	0.000	1.263	1993	13	8.0	7.3181
14040000	C	7	1	1	0.000	1.263	1994	14	7.3	7.1024
14050000	C	7	1	1	0.000	3.237	1986	5	8.0	7.8550
14050000	C	7	1	1	0.000	3.237	1987	6	7.0	7.5297
14050000	C	7	1	1	0.000	3.237	1988	7	7.0	7.0712
14050000	C	7	1	1	0.000	3.237	1989	8	7.0	6.4429
14050000	C	7	1	1	0.000	3.237	1990	9	6.0	5.6082
14050000	C	7	1	1	0.000	3.237	1991	10	3.5	4.5305
14050000	C	7	1	1	0.000	3.237	1992	11	3.5	3.1732
14050000	C	7	1	1	0.000	3.237	1993	12	0.0	1.4997
14140000	R	7	4	1	0.000	0.817	1986	1	8.4	8.4436
14140000	R	7	4	1	0.000	0.817	1987	2	8.5	8.3505
14140000	R	7	4	1	0.000	0.817	1988	3	8.1	8.2180
14140000	R	7	4	1	0.000	0.817	1989	4	8.0	8.0425
14140000	R	7	4	1	0.000	0.817	1990	5	7.0	7.8204
14140000	R	7	4	1	0.000	0.817	1991	6	7.0	7.5481
14140000	R	7	4	1	0.000	0.817	1992	7	7.5	7.2220
14140000	R	7	4	1	0.000	0.817	1993	8	6.5	6.8385
14140000	R	7	4	1	0.000	0.817	1994	9	6.5	6.3940
14140000	L	7	4	1	0.000	0.817	1986	1	8.5	8.5637
14140000	L	7	4	1	0.000	0.817	1987	2	8.4	8.2638
14140000	L	7	4	1	0.000	0.817	1988	3	8.1	8.1183

Table B – Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
14140000	L	7	4	1	0.000	0.817	1989	4	8.0	8.0666
14140000	L	7	4	1	0.000	0.817	1990	5	8.0	8.0481
14140000	L	7	4	1	0.000	0.817	1991	6	8.0	8.0022
14140000	L	7	4	1	0.000	0.817	1992	7	8.0	7.8683
14140000	L	7	4	1	0.000	0.817	1993	8	7.5	7.5858
14140000	L	7	4	1	0.000	0.817	1994	9	7.1	7.0941
14140000	R	7	4	7	12.000	15.390	1986	1	8.7	8.7755
14140000	R	7	4	1	12.000	15.390	1987	2	9.0	8.7599
14140000	R	7	4	1	12.000	15.390	1988	3	8.4	8.7497
14140000	R	7	4	1	12.000	15.390	1989	4	8.9	8.6861
14140000	R	7	4	1	12.000	15.390	1990	5	8.0	8.5373
14140000	R	7	4	1	12.000	15.390	1991	6	7.0	8.2967
14140000	R	7	4	1	12.000	15.390	1992	7	7.9	7.9475
14140000	R	7	4	1	12.000	15.390	1993	8	7.5	7.4729
14140000	R	7	4	1	12.000	15.390	1994	9	7.5	6.8561
15009000	C	7	1	7	1.907	2.570	1987	1	8.1	8.3425
15009000	C	7	1	1	1.907	2.570	1988	2	7.9	8.0498
15009000	C	7	1	1	1.907	2.570	1989	3	7.5	7.9035
15009000	C	7	1	1	1.907	2.570	1990	4	7.7	7.8502
15009000	C	7	1	1	1.907	2.570	1991	5	7.7	7.8365
15009000	C	7	1	1	1.907	2.570	1992	6	7.7	7.8090
15009000	C	7	1	1	1.907	2.570	1993	7	7.8	7.7143
15009000	C	7	1	1	1.907	2.570	1994	8	7.8	7.4990
15010000	C	7	1	1	0.000	0.506	1977	1	7.4	7.6054
15010000	C	7	1	1	0.000	0.506	1978	2	7.6	7.5676
15010000	C	7	1	1	0.000	0.506	1979	3	7.9	7.5268
15010000	C	7	1	1	0.000	0.506	1981	5		7.4146
15010000	C	7	1	1	0.000	0.506	1982	6		7.3324
15010000	C	7	1	1	0.000	0.506	1983	7	6.9	7.2256
15010000	C	7	1	1	0.000	0.506	1986	10	7.0	6.7036
15010000	C	7	1	1	0.000	0.506	1987	11	6.0	6.4444
15010000	C	7	1	1	0.000	0.506	1988	12	6.0	6.1336
15010000	C	7	1	1	0.000	0.506	1989	13	6.0	5.7658
15010000	C	7	1	1	0.000	0.506	1990	14	6.0	5.3356
15010000	C	7	1	1	0.000	0.506	1991	15	4.0	4.8376
15010000	C	7	1	1	0.000	0.506	1992	16	4.5	4.2664
15010000	C	7	1	1	0.000	0.506	1993	17	3.5	3.6166
15020000	C	7	1	1	0.000	1.115	1981	1	7.6	7.8591
15020000	C	7	1	1	0.000	1.115	1982	2	7.5	7.6938
15020000	C	7	1	1	0.000	1.115	1983	3	7.4	7.5777
15020000	C	7	1	1	0.000	1.115	1986	6	7.9	7.4346
15020000	C	7	1	1	0.000	1.115	1987	7	7.4	7.4253
15020000	C	7	1	1	0.000	1.115	1988	8	7.5	7.4202
15020000	C	7	1	1	0.000	1.115	1989	9	7.7	7.4103
15020000	C	7	1	1	0.000	1.115	1990	10	7.2	7.3866
15020000	C	7	1	1	0.000	1.115	1991	11	7.2	7.3401
15020000	C	7	1	1	0.000	1.115	1992	12	7.7	7.2618
15020000	C	7	1	1	0.000	1.115	1993	13	7.0	7.1427
15020000	C	7	1	1	0.000	1.115	1994	14	7.0	6.9738
15030000	L	7	1	1	1.556	3.148	1987	1	8.3	8.3325
15030000	L	7	1	1	1.556	3.148	1988	2	8.3	8.1945
15030000	L	7	1	1	1.556	3.148	1989	3	8.0	8.0971
15030000	L	7	1	1	1.556	3.148	1990	4	8.0	8.0181
15030000	L	7	1	1	1.556	3.148	1991	5	8.0	7.9353

Table B – Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
15030000	L	7	1	1	1.556	3.148	1992	6	8.6	7.8265
15030000	L	7	1	1	1.556	3.148	1993	7	8.6	7.6695
15030000	L	7	1	1	1.556	3.148	1994	8	8.5	7.4421
15050000	C	7	1	7	2.870	3.934	1983	1	8.0	7.9714
15050000	C	7	1	1	2.870	3.934	1986	4	7.9	7.8364
15050000	C	7	1	1	2.870	3.934	1987	5	7.2	7.5982
15050000	C	7	1	1	2.870	3.934	1988	6	7.3	7.2914
15050000	C	7	1	1	2.870	3.934	1989	7	7.3	6.9328
15050000	C	7	1	1	2.870	3.934	1990	8	7.0	6.5392
15050000	C	7	1	1	2.870	3.934	1991	9	5.5	6.1274
15050000	C	7	1	1	2.870	3.934	1992	10	5.5	5.7142
15050000	C	7	1	1	2.870	3.934	1993	11	5.5	5.3184
15050000	C	7	1	1	2.870	3.934	1994	12	3.5	4.9508
15060000	R	7	1	1	5.800	6.283	1976	1	8.0	7.9618
15060000	R	7	1	1	5.800	6.283	1977	2	7.9	7.9595
15060000	R	7	1	1	5.800	6.283	1978	3	8.0	7.8858
15060000	R	7	1	1	5.800	6.283	1979	4	7.4	7.7191
15060000	R	7	1	1	5.800	6.283	1981	6	7.9	7.0203
15060000	R	7	1	1	5.800	6.283	1982	7	5.5	6.4450
15060000	R	7	1	1	5.800	6.283	1983	8	6.0	5.6903
15080000	C	7	1	7	0.203	0.754	1987	1	8.3	8.9000
15080000	C	7	1	1	0.203	0.754	1988	2	8.4	8.5760
15080000	C	7	1	1	0.203	0.754	1989	3	8.4	8.3732
15080000	C	7	1	1	0.203	0.754	1990	4	8.1	8.2082
15080000	C	7	1	1	0.203	0.754	1991	5	8.2	7.9976
15080000	C	7	1	1	0.203	0.754	1992	6	8.0	7.6580
15080000	C	7	1	1	0.203	0.754	1993	7	6.5	7.1060
15080000	C	7	1	1	0.203	0.754	1994	8	6.5	6.2582
15090000	L	7	1	1	7.212	8.715	1986	1	8.4	8.3925
15090000	L	7	1	1	7.212	8.715	1987	2	8.3	8.3007
15090000	L	7	1	1	7.212	8.715	1988	3	8.3	8.2953
15090000	L	7	1	1	7.212	8.715	1989	4	8.2	8.2931
15090000	L	7	1	1	7.212	8.715	1990	5	8.3	8.2329
15090000	L	7	1	1	7.212	8.715	1991	6	8.2	8.0315
15090000	L	7	1	1	7.212	8.715	1992	7	7.4	7.6167
15090000	L	7	1	1	7.212	8.715	1993	8	7.0	6.9141
15090000	L	7	1	1	7.212	8.715	1994	9	4.5	5.8493
15100000	L	7	1	1	1.000	1.800	1987	1	7.1	8.8333
15100000	L	7	1	1	1.000	1.800	1988	2	7.5	7.9358
15100000	L	7	1	1	1.000	1.800	1989	3	7.7	7.4393
15100000	L	7	1	1	1.000	1.800	1990	4	7.3	7.2286
15100000	L	7	1	1	1.000	1.800	1991	5	6.7	7.2038
15100000	L	7	1	1	1.000	1.800	1992	6	6.9	7.1885
15100000	L	7	1	1	1.000	1.800	1993	7	7.0	7.1593
15100000	L	7	1	1	1.000	1.800	1994	8	7.0	6.9398
15120000	R	7	1	1	1.192	2.530	1986	1	8.7	9.0086
15120000	R	7	1	1	1.192	2.530	1987	2	8.5	8.5865
15120000	R	7	1	1	1.192	2.530	1988	3	8.4	8.3536
15120000	R	7	1	1	1.192	2.530	1989	4	8.6	8.2523
15120000	R	7	1	1	1.192	2.530	1990	5	8.0	8.2250
15120000	R	7	1	1	1.192	2.530	1991	6	8.0	8.2141
15120000	R	7	1	1	1.192	2.530	1992	7	8.6	8.1620
15120000	R	7	1	1	1.192	2.530	1993	8	8.6	8.0111
15120000	R	7	1	1	1.192	2.530	1994	9	8.3	7.7038

Table B -- Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
15150000	R	7	1	1	30.826	31.332	1979	1	10.0	9.8780
15150000	R	7	1	1	30.826	31.332	1981	3	8.6	8.9988
15150000	R	7	1	1	30.826	31.332	1982	4	8.5	8.7812
15150000	R	7	1	1	30.826	31.332	1983	5	8.1	8.6660
15150000	R	7	1	1	30.826	31.332	1986	8	8.8	8.5928
15150000	R	7	1	1	30.826	31.332	1987	9	8.7	8.5452
15150000	R	7	1	1	30.826	31.332	1988	10	8.7	8.4290
15150000	R	7	1	1	30.826	31.332	1989	11	8.7	8.2100
15150000	R	7	1	1	30.826	31.332	1990	12	8.0	7.8540
15220000	L	7	1	7	0.501	1.198	1987	1	8.3	8.3435
15220000	L	7	1	1	0.501	1.198	1988	2	8.2	8.3246
15220000	L	7	1	1	0.501	1.198	1989	3	8.3	8.2976
15220000	L	7	1	1	0.501	1.198	1990	4	8.3	8.2523
15220000	L	7	1	1	0.501	1.198	1991	5	8.1	8.1380
15220000	L	7	1	1	0.501	1.198	1992	6	8.0	7.9931
15220000	L	7	1	1	0.501	1.198	1993	7	8.2	7.8290
15220000	L	7	1	1	0.501	1.198	1994	8	8.3	7.6571
15230000	L	7	1	1	0.600	1.968	1986	1	8.2	8.2413
15230000	L	7	1	1	0.600	1.968	1987	2	8.1	7.9158
15230000	L	7	1	1	0.600	1.968	1988	3	7.5	7.7127
15230000	L	7	1	1	0.600	1.968	1989	4	7.6	7.5972
15230000	L	7	1	1	0.600	1.968	1990	5	7.5	7.5345
15230000	L	7	1	1	0.600	1.968	1991	6	7.7	7.4898
15230000	L	7	1	1	0.600	1.968	1992	7	6.9	7.4283
15230000	L	7	1	1	0.600	1.968	1993	8	7.1	7.3152
15230000	L	7	1	1	0.600	1.968	1994	9	7.2	7.1157
16060000	L	1	1	7	6.884	9.764	1987	1	8.5	8.7661
16060000	L	1	1	1	6.884	9.764	1988	2	9.0	8.7580
16060000	L	1	1	1	6.884	9.764	1989	3	8.9	8.6606
16060000	L	1	1	1	6.884	9.764	1990	4	8.7	8.6135
16060000	L	1	1	1	6.884	9.764	1991	5	7.5	8.3098
16060000	L	1	1	1	6.884	9.764	1992	6	8.2	7.8241
16060000	L	1	1	1	6.884	9.764	1993	7	7.5	7.1336
16060000	L	1	1	1	6.884	9.764	1994	8	6.0	6.2155
16070000	C	1	1	1	8.614	14.120	1976	1	10.0	9.7070
16070000	C	1	1	1	8.614	14.120	1977	2	9.1	9.3624
16070000	C	1	1	1	8.614	14.120	1978	3	8.8	9.0502
16070000	C	1	1	1	8.614	14.120	1979	4	8.9	8.7674
16070000	C	1	1	1	8.614	14.120	1981	6	8.0	8.2780
16070000	C	1	1	1	8.614	14.120	1982	7	8.0	8.0654
16070000	C	1	1	1	8.614	14.120	1983	8	8.7	7.8702
16070000	C	1	1	1	8.614	14.120	1986	11	7.0	7.3590
16070000	C	1	1	1	8.614	14.120	1987	12	7.0	7.2034
16070000	C	1	1	1	8.614	14.120	1988	13	7.0	7.0502
16070000	C	1	1	1	8.614	14.120	1989	14	7.0	6.8964
16070000	C	1	1	1	8.614	14.120	1990	15	7.0	6.7390
16070000	C	1	1	1	8.614	14.120	1991	16	6.0	6.5750
16070000	C	1	1	1	8.614	14.120	1992	17	7.0	6.4014
16070000	C	1	1	1	8.614	14.120	1993	18	6.0	6.2152
16070000	C	1	1	1	8.614	14.120	1994	19	6.0	6.0134
16090000	C	1	1	1	12.700	17.987	1983	1	8.0	8.5980
16090000	C	1	1	1	12.700	17.987	1986	4	8.4	8.5515
16090000	C	1	1	1	12.700	17.987	1987	5	8.5	8.5331
16090000	C	1	1	1	12.700	17.987	1988	6	8.5	8.4320

Table B -- Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
16090000	C	1	1	1	12.700	17.987	1989	7	8.5	8.2971
16090000	C	1	1	1	12.700	17.987	1990	8	8.5	8.1308
16090000	C	1	1	1	12.700	17.987	1991	9	7.5	7.9355
16090000	C	1	1	1	12.700	17.987	1992	10	7.5	7.7136
16090000	C	1	1	1	12.700	17.987	1993	11	7.7	7.4675
16090000	C	1	1	1	12.700	17.987	1994	12	8.0	7.1996
16110000	L	1	1	1	0.000	1.601	1976	1	10.0	9.6796
16110000	L	1	1	1	0.000	1.601	1977	2	9.1	9.2494
16110000	L	1	1	1	0.000	1.601	1978	3	8.7	8.8934
16110000	L	1	1	1	0.000	1.601	1979	4	8.0	8.6026
16110000	L	1	1	1	0.000	1.601	1981	6	7.0	8.1806
16110000	L	1	1	1	0.000	1.601	1982	7	7.0	8.0314
16110000	L	1	1	1	0.000	1.601	1983	8	8.0	7.9114
16110000	L	1	1	1	0.000	1.601	1986	11	7.0	7.6366
16110000	L	1	1	1	0.000	1.601	1987	12	7.5	7.5434
16110000	L	1	1	1	0.000	1.601	1988	13	7.5	7.4344
16110000	L	1	1	1	0.000	1.601	1989	14	7.5	7.3006
16110000	L	1	1	1	0.000	1.601	1990	15	7.5	7.1330
16110000	L	1	1	1	0.000	1.601	1991	16	7.5	6.9226
16110000	L	1	1	1	0.000	1.601	1992	17	6.5	6.6604
16110000	L	1	1	1	0.000	1.601	1993	18	6.5	6.3374
16110000	L	1	1	1	0.000	1.601	1994	19	6.0	5.9446
16110000	R	1	1	1	3.147	5.300	1983	1	8.0	8.0709
16110000	R	1	1	1	3.147	5.300	1986	4	7.0	6.8871
16110000	R	1	1	1	3.147	5.300	1987	5	7.0	6.7597
16110000	R	1	1	1	3.147	5.300	1988	6	7.0	6.7019
16110000	R	1	1	1	3.147	5.300	1989	7	6.0	6.6753
16110000	R	1	1	1	3.147	5.300	1990	8	6.0	6.6415
16110000	R	1	1	1	3.147	5.300	1991	9	7.0	6.5621
16110000	R	1	1	1	3.147	5.300	1992	10	7.0	6.3987
16110000	R	1	1	1	3.147	5.300	1993	11	6.0	6.1129
16110000	R	1	1	1	3.147	5.300	1994	12	5.5	5.6663
16110000	L	1	1	7	25.594	27.175	1982	1	8.8	8.8981
16110000	L	1	1	1	25.594	27.175	1983	2	8.7	8.5563
16110000	L	1	1	1	25.594	27.175	1986	5	8.0	8.0565
16110000	L	1	1	1	25.594	27.175	1987	6	8.0	7.9911
16110000	L	1	1	1	25.594	27.175	1988	7	8.0	7.9393
16110000	L	1	1	1	25.594	27.175	1989	8	8.0	7.8789
16110000	L	1	1	1	25.594	27.175	1990	9	7.5	7.7877
16110000	L	1	1	1	25.594	27.175	1991	10	8.0	7.6435
16110000	L	1	1	1	25.594	27.175	1992	11	8.0	7.4241
16110000	L	1	1	1	25.594	27.175	1993	12	7.5	7.1073
16110000	L	1	1	1	25.594	27.175	1994	13	6.5	6.6709
16160000	C	1	1	2	2.707	6.100	1977	1	10.0	9.4655
16160000	C	1	1	1	2.707	6.100	1978	2	8.8	9.2358
16160000	C	1	1	1	2.707	6.100	1979	3	8.7	9.0247
16160000	C	1	1	1	2.707	6.100	1981	5	9.0	8.6463
16160000	C	1	1	1	2.707	6.100	1982	6	8.4	8.4730
16160000	C	1	1	1	2.707	6.100	1983	7	8.8	8.3063
16160000	C	1	1	1	2.707	6.100	1986	10	7.5	7.8158
16160000	C	1	1	1	2.707	6.100	1987	11	7.5	7.6455
16160000	C	1	1	1	2.707	6.100	1988	12	7.5	7.4668
16160000	C	1	1	1	2.707	6.100	1989	13	7.5	7.2767
16160000	C	1	1	1	2.707	6.100	1990	14	7.5	7.0722
16160000	C	1	1	1	2.707	6.100	1991	15	7.5	6.8503
16160000	C	1	1	1	2.707	6.100	1992	16	7.5	6.6080

Table B -- Continued

RDWYID	RDWSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
16180000	L	1	1	7	27.790	30.015	1986	1	8.6	9.2934
16180000	L	1	1	1	27.790	30.015	1987	2	9.0	9.0887
16180000	L	1	1	1	27.790	30.015	1988	3	9.0	8.9654
16180000	L	1	1	1	27.790	30.015	1989	4	9.0	8.8869
16180000	L	1	1	1	27.790	30.015	1990	5	9.0	8.8166
16180000	L	1	1	1	27.790	30.015	1991	6	8.8	8.7179
16180000	L	1	1	1	27.790	30.015	1992	7	7.9	8.5542
16180000	L	1	1	1	27.790	30.015	1993	8	8.1	8.2889
16180000	L	1	1	1	27.790	30.015	1994	9	8.8	7.8854
16250000	C	1	1	1	4.550	5.986	1987	1	8.9	9.4023
16250000	C	1	1	1	4.550	5.986	1988	2	9.0	9.2069
16250000	C	1	1	1	4.550	5.986	1989	3	9.0	8.9995
16250000	C	1	1	1	4.550	5.986	1990	4	9.0	8.7801
16250000	C	1	1	1	4.550	5.986	1991	5	8.5	8.5487
16250000	C	1	1	1	4.550	5.986	1992	6	8.2	8.3053
16250000	C	1	1	1	4.550	5.986	1993	7	8.1	8.0499
16250000	C	1	1	1	4.550	5.986	1994	8		7.7825
16250000	L	1	1	1	25.438	26.125	1976	1	8.9	8.7039
16250000	L	1	1	1	25.438	26.125	1977	2	8.3	8.4284
16250000	L	1	1	1	25.438	26.125	1978	3	8.0	8.2189
16250000	L	1	1	1	25.438	26.125	1979	4	7.9	8.0652
16250000	L	1	1	1	25.438	26.125	1981	6	8.0	7.8844
16250000	L	1	1	1	25.438	26.125	1982	7	8.5	7.8369
16250000	L	1	1	1	25.438	26.125	1983	8	7.8	7.8044
16250000	L	1	1	1	25.438	26.125	1986	11	7.0	7.6949
16250000	L	1	1	1	25.438	26.125	1987	12	7.3	7.6204
16250000	L	1	1	1	25.438	26.125	1988	13	7.9	7.5099
16250000	L	1	1	1	25.438	26.125	1989	14	7.8	7.3532
16250000	L	1	1	1	25.438	26.125	1990	15	7.3	7.1401
16250000	L	1	1	1	25.438	26.125	1991	16	7.7	6.8604
16250000	L	1	1	1	25.438	26.125	1992	17	6.0	6.5039
16250000	L	1	1	1	25.438	26.125	1993	18	6.0	6.0604
16250000	L	1	1	1	25.438	26.125	1994	19	6.0	5.5197
16280000	C	1	1	1	4.600	5.056	1982	1	8.3	8.4160
16280000	C	1	1	1	4.600	5.056	1983	2	8.5	8.3140
16280000	C	1	1	1	4.600	5.056	1986	5	7.8	8.2910
16280000	C	1	1	1	4.600	5.056	1987	6	8.3	8.2676
16280000	C	1	1	1	4.600	5.056	1988	7	8.5	8.2370
16280000	C	1	1	1	4.600	5.056	1989	8	8.5	8.2352
16280000	C	1	1	1	4.600	5.056	1990	9	8.5	8.1152
16280000	C	1	1	1	4.600	5.056	1991	10	7.5	7.8202
16280000	C	1	1	1	4.600	5.056	1992	11	7.0	7.3460
16280000	C	1	1	1	4.600	5.056	1993	12	7.0	6.6560
16300000	L	1	1	1	2.335	3.477	1981	1	8.8	8.9813
16300000	L	1	1	1	2.335	3.477	1982	2	8.4	8.9078
16300000	L	1	1	1	2.335	3.477	1983	3	8.5	8.8481
16300000	L	1	1	1	2.335	3.477	1986	6		8.6978
16300000	L	1	1	1	2.335	3.477	1987	7	9.0	8.6393
16300000	L	1	1	1	2.335	3.477	1988	8	9.0	8.5676
16300000	L	1	1	1	2.335	3.477	1989	9	8.6	8.4773
16300000	L	1	1	1	2.335	3.477	1990	10	8.7	8.3630
16300000	L	1	1	1	2.335	3.477	1991	11	8.3	8.2193
16300000	L	1	1	1	2.335	3.477	1992	12	8.2	8.0408
16300000	L	1	1	1	2.335	3.477	1993	13	8.3	7.8221
16300000	L	1	1	1	2.335	3.477	1994	14	7.7	7.5578

Table B -- Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
16300000	L	1	1	1	3.477	5.733	1981	1	8.8	8.8191
16300000	L	1	1	1	3.477	5.733	1982	2	8.4	8.5023
16300000	L	1	1	1	3.477	5.733	1983	3	8.5	8.2839
16300000	L	1	1	1	3.477	5.733	1986	6	7.9	8.0331
16300000	L	1	1	1	3.477	5.733	1987	7	8.0	8.0223
16300000	L	1	1	1	3.477	5.733	1988	8	8.0	8.0169
16300000	L	1	1	1	3.477	5.733	1989	9	8.0	7.9983
16300000	L	1	1	1	3.477	5.733	1990	10	8.0	7.9479
16300000	L	1	1	1	3.477	5.733	1991	11	8.0	7.8471
16300000	L	1	1	1	3.477	5.733	1992	12	8.0	7.6773
16300000	L	1	1	1	3.477	5.733	1993	13	8.0	7.4199
16300000	L	1	1	1	3.477	5.733	1994	14	7.0	7.0563
16331000	L	1	1	7	0.000	0.898	1987	1	7.6	8.6091
16331000	L	1	1	1	0.000	0.898	1988	2	8.2	8.1935
16331000	L	1	1	1	0.000	0.898	1989	3	8.0	7.9599
16331000	L	1	1	1	0.000	0.898	1990	4	7.8	7.8507
16331000	L	1	1	1	0.000	0.898	1991	5	7.4	7.8083
16331000	L	1	1	1	0.000	0.898	1992	6	7.8	7.7751
16331000	L	1	1	1	0.000	0.898	1993	7	7.7	7.6935
16331000	L	1	1	1	0.000	0.898	1994	8	7.8	7.5059
17005000	R	1	1	7	0.165	3.048	1982	1	8.5	8.6460
17005000	R	1	1	1	0.165	3.048	1983	2	8.5	8.5608
17005000	R	1	1	1	0.165	3.048	1986	5	8.3	8.5436
17005000	R	1	1	1	0.165	3.048	1987	6	8.5	8.3976
17005000	R	1	1	1	0.165	3.048	1988	7	8.7	8.3778
17005000	R	1	1	1	0.165	3.048	1989	8	8.3	8.1498
17005000	R	1	1	1	0.165	3.048	1990	9	8.5	7.8608
17005000	R	1	1	1	0.165	3.048	1991	10	7.0	7.5120
17005000	R	1	1	1	0.165	3.048	1992	11	7.0	7.1046
17005000	R	1	1	1	0.165	3.048	1993	12	6.5	6.6398
17005000	R	1	1	1	0.165	3.048	1994	13	6.5	6.1188
17005000	L	1	1	7	0.165	3.048	1982	1	8.6	8.6589
17005000	L	1	1	1	0.165	3.048	1983	2	8.6	8.6397
17005000	L	1	1	1	0.165	3.048	1986	5	8.3	8.5497
17005000	L	1	1	1	0.165	3.048	1987	6	8.5	8.5137
17005000	L	1	1	1	0.165	3.048	1988	7	8.7	8.3847
17005000	L	1	1	1	0.165	3.048	1989	8	8.2	8.1651
17005000	L	1	1	1	0.165	3.048	1990	9	8.5	7.8921
17005000	L	1	1	1	0.165	3.048	1991	10	7.0	7.5669
17005000	L	1	1	1	0.165	3.048	1992	11	7.0	7.1907
17005000	L	1	1	1	0.165	3.048	1993	12	6.5	6.7647
17005000	L	1	1	1	0.165	3.048	1994	13	6.5	6.2901
17020000	L	1	1	1	4.389	5.248	1976	1	7.9	9.6391
17020000	L	1	1	1	4.389	5.248	1977	2	8.5	9.0722
17020000	L	1	1	1	4.389	5.248	1981	6	8.5	8.4344
17020000	L	1	1	1	4.389	5.248	1982	7	8.4	8.3887
17020000	L	1	1	1	4.389	5.248	1983	8	8.5	8.3566
17020000	L	1	1	1	4.389	5.248	1986	11	8.0	8.2991
17020000	L	1	1	1	4.389	5.248	1987	12	8.4	8.0452
17020000	L	1	1	1	4.389	5.248	1988	13	8.2	7.6279
17020000	L	1	1	1	4.389	5.248	1989	14	7.5	7.0118
17020000	L	1	1	1	4.389	5.248	1990	15	5.5	6.1615
17020000	L	1	1	1	4.389	5.248	1991	16	5.0	5.0416
17040000	L	1	1	1	5.129	5.682	1981	1	8.4	8.4336

Table B -- Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
17040000	L	1	1	1	5.129	5.682	1982	2	8.3	8.4006
17040000	L	1	1	1	5.129	5.682	1983	3	8.5	8.3670
17040000	L	1	1	1	5.129	5.682	1986	6	8.0	8.3550
17040000	L	1	1	1	5.129	5.682	1987	7	8.7	8.3540
17040000	L	1	1	1	5.129	5.682	1988	8	8.2	8.1710
17040000	L	1	1	1	5.129	5.682	1989	9	7.8	7.8486
17040000	L	1	1	1	5.129	5.682	1990	10	7.3	7.3548
17040000	L	1	1	1	5.129	5.682	1991	11	6.6	6.6566
17040000	L	1	1	1	5.129	5.682	1992	12	5.5	5.7210
17040000	L	1	1	1	5.129	5.682	1993	13	4.5	4.5150
17070000	C	1	1	7	14.029	20.537	1983	1	8.6	10.0000
17070000	C	1	1	1	14.029	20.537	1986	4	8.4	8.9226
17070000	C	1	1	1	14.029	20.537	1987	5	8.5	8.7650
17070000	C	1	1	1	14.029	20.537	1988	6	8.4	8.6736
17070000	C	1	1	1	14.029	20.537	1989	7	8.7	8.6238
17070000	C	1	1	1	14.029	20.537	1990	8	8.4	8.5910
17070000	C	1	1	1	14.029	20.537	1991	9	8.5	8.5506
17070000	C	1	1	1	14.029	20.537	1992	10	8.7	8.4780
17070000	C	1	1	1	14.029	20.537	1993	11	8.6	8.3486
17070000	C	1	1	1	14.029	20.537	1994	12	8.5	8.1378
17075000	L	1	4	7	0.000	4.214	1982	1	8.7	9.0196
17075000	L	1	4	1	0.000	4.214	1983	2	8.6	8.5628
17075000	L	1	4	1	0.000	4.214	1986	5	8.0	8.0396
17075000	L	1	4	1	0.000	4.214	1987	6	8.0	7.9916
17075000	L	1	4	1	0.000	4.214	1988	7	8.0	7.9288
17075000	L	1	4	1	0.000	4.214	1989	8	8.0	7.8044
17075000	R	1	4	7	0.000	4.214	1982	1	8.6	8.6007
17075000	R	1	4	1	0.000	4.214	1983	2	8.5	8.4989
17075000	R	1	4	1	0.000	4.214	1986	5	8.0	8.1359
17075000	R	1	4	1	0.000	4.214	1987	6	8.0	8.0919
17075000	R	1	4	1	0.000	4.214	1988	7	8.0	8.0303
17075000	R	1	4	1	0.000	4.214	1989	8	8.0	8.0297
17075000	L	1	4	7	22.885	25.553	1989	1	9.2	9.1110
17075000	L	1	4	1	22.885	25.553	1990	2	8.7	8.9299
17075000	L	1	4	1	22.885	25.553	1991	3	8.8	8.7678
17075000	L	1	4	1	22.885	25.553	1992	4	9.0	8.6025
17075000	L	1	4	1	22.885	25.553	1993	5	9.1	8.4118
17075000	L	1	4	1	22.885	25.553	1994	6	8.3	8.1735
17080000	C	1	1	7	0.110	2.562	1988	1	8.3	8.2979
17080000	C	1	1	1	0.110	2.562	1989	2	8.0	8.2798
17080000	C	1	1	1	0.110	2.562	1990	3	8.6	8.2478
17080000	C	1	1	1	0.110	2.562	1991	4	8.2	8.2433
17080000	C	1	1	1	0.110	2.562	1992	5	8.1	8.2382
17080000	C	1	1	1	0.110	2.562	1993	6	8.2	8.0797
17080000	C	1	1	1	0.110	2.562	1994	7	7.7	7.7438
17120000	R	1	1	1	0.564	1.130	1987	1	8.5	8.3380
17120000	R	1	1	1	0.564	1.130	1988	2	7.6	7.8472
17120000	R	1	1	1	0.564	1.130	1989	3	7.3	7.5776
17120000	R	1	1	1	0.564	1.130	1990	4	7.9	7.4506
17120000	R	1	1	1	0.564	1.130	1991	5	7.6	7.3876
17120000	R	1	1	1	0.564	1.130	1992	6	7.0	7.3100
17120000	R	1	1	1	0.564	1.130	1993	7	7.0	7.1392
17120000	R	1	1	1	0.564	1.130	1994	8	6.9	6.7966

Table B – Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
18010000	C	5	1	1	7.511	9.437	1976	1	8.3	8.2577
18010000	C	5	1	1	7.511	9.437	1977	2	8.3	8.2427
18010000	C	5	1	1	7.511	9.437	1978	3	8.0	8.2373
18010000	C	5	1	1	7.511	9.437	1979	4	8.0	8.1797
18010000	C	5	1	1	7.511	9.437	1981	6	8.5	8.1137
18010000	C	5	1	1	7.511	9.437	1982	7	8.0	8.0033
18010000	C	5	1	1	7.511	9.437	1983	8	8.0	7.8647
18010000	C	5	1	1	7.511	9.437	1986	11	7.0	7.2977
18010000	C	5	1	1	7.511	9.437	1987	12	7.0	7.0643
18010000	C	5	1	1	7.511	9.437	1988	13	7.0	6.8117
18010000	C	5	1	1	7.511	9.437	1989	14	7.0	6.5417
18010000	C	5	1	1	7.511	9.437	1990	15	7.0	6.2561
18010000	C	5	1	1	7.511	9.437	1991	16	7.0	5.9567
18010000	C	5	1	1	7.511	9.437	1992	17	7.0	5.6453
18010000	C	5	1	1	7.511	9.437	1993	18	6.5	5.3237
18010000	C	5	1	1	24.370	25.680	1977	1	8.4	9.4412
18010000	C	5	1	1	24.370	25.680	1978	2	8.0	9.0484
18010000	C	5	1	1	24.370	25.680	1979	3	7.7	8.7856
18010000	C	5	1	1	24.370	25.680	1981	5	8.4	8.5300
18010000	C	5	1	1	24.370	25.680	1982	6	8.4	8.4772
18010000	C	5	1	1	24.370	25.680	1983	7	8.7	8.4344
18010000	C	5	1	1	24.370	25.680	1986	10	8.0	8.0660
18010000	C	5	1	1	24.370	25.680	1987	11	8.0	7.7632
18010000	C	5	1	1	24.370	25.680	1988	12	8.0	7.3204
18010000	C	5	1	1	24.370	25.680	1989	13	8.0	6.7076
18010000	C	5	1	1	24.370	25.680	1990	14	6.0	5.8948
18030000	C	5	1	1	0.047	2.156	1981	1	8.8	8.7515
18030000	C	5	1	1	0.047	2.156	1982	2	9.0	8.6615
18030000	C	5	1	1	0.047	2.156	1983	3	8.0	8.5803
18030000	C	5	1	1	0.047	2.156	1986	6	8.0	8.3115
18030000	C	5	1	1	0.047	2.156	1987	7	8.7	8.1875
18030000	C	5	1	1	0.047	2.156	1988	8	8.4	8.0333
18030000	C	5	1	1	0.047	2.156	1989	9	8.3	7.8411
18030000	C	5	1	2	0.047	2.156	1990	10	7.0	7.6031
18030000	C	5	1	2	0.047	2.156	1991	11	7.0	7.3115
18030000	C	5	1	2	0.047	2.156	1992	12	7.0	6.9585
18030000	C	5	1	2	0.047	2.156	1993	13	7.0	6.5363
18030000	C	5	1	2	0.047	2.156	1994	14	6.1	6.0371
18110000	C	5	1	7	14.427	16.727	1987	1	7.8	9.0347
18110000	C	5	1	1	14.427	16.727	1988	2	8.6	8.6478
18110000	C	5	1	1	14.427	16.727	1989	3	8.2	8.4995
18110000	C	5	1	1	14.427	16.727	1990	4	8.0	8.4680
18110000	C	5	1	1	14.427	16.727	1991	5	8.4	8.4315
18110000	C	5	1	1	14.427	16.727	1992	6	8.1	8.2882
18110000	C	5	1	1	14.427	16.727	1993	7	8.1	7.8563
18110000	C	5	1	1	14.427	16.727	1994	8	8.0	7.0740
18120000	R	5	1	7	0.000	1.016	1986	1	9.0	9.1030
18120000	R	5	1	1	0.000	1.016	1987	2	9.0	8.7772
18120000	R	5	1	1	0.000	1.016	1988	3	8.2	8.3954
18120000	R	5	1	1	0.000	1.016	1989	4	8.2	7.9090
18120000	R	5	1	1	0.000	1.016	1990	5	7.0	7.2694
18120000	R	5	1	1	0.000	1.016	1991	6	6.5	6.4280
18120000	R	5	1	1	0.000	1.016	1992	7	5.0	5.3362
18120000	R	5	1	1	0.000	1.016	1993	8	4.5	3.9454
18120000	R	5	1	1	0.000	1.016	1994	9	2.0	2.2070

Table B – Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
18130000	L	5	4	1	0.000	0.998	1982	1	9.1	9.1743
18130000	L	5	4	1	0.000	0.998	1983	2	8.8	8.6627
18130000	L	5	4	1	0.000	0.998	1986	5	8.0	8.0819
18130000	L	5	4	1	0.000	0.998	1987	6	8.0	8.0623
18130000	L	5	4	1	0.000	0.998	1988	7	8.0	8.0577
18130000	L	5	4	1	0.000	0.998	1989	8	8.0	8.0249
18130000	L	5	4	1	0.000	0.998	1990	9	8.0	7.9207
18130000	L	5	4	1	0.000	0.998	1991	10	8.0	7.7019
18130000	L	5	4	1	0.000	0.998	1992	11	7.0	7.3253
18130000	L	5	4	1	0.000	0.998	1993	12	6.5	6.7477
18130000	L	5	4	1	0.000	0.998	1994	13	6.0	5.9259
18130000	R	5	4	1	1.033	4.096	1982	1	9.1	9.0715
18130000	R	5	4	1	1.033	4.096	1983	2	8.7	8.6979
18130000	R	5	4	1	1.033	4.096	1986	5	8.0	8.1219
18130000	R	5	4	1	1.033	4.096	1987	6	8.0	8.0375
18130000	R	5	4	1	1.033	4.096	1988	7	8.0	7.9699
18130000	R	5	4	1	1.033	4.096	1989	8	8.0	7.8969
18130000	R	5	4	1	1.033	4.096	1990	9	8.0	7.7963
18130000	R	5	4	1	1.033	4.096	1991	10	8.0	7.6459
18130000	R	5	4	1	1.033	4.096	1992	11	7.0	7.4235
18130000	R	5	4	1	1.033	4.096	1993	12	7.0	7.1069
18130000	R	5	4	1	1.033	4.096	1994	13	7.0	6.6739
18130000	L	5	4	1	7.721	10.387	1982	1	9.2	9.2492
18130000	L	5	4	1	7.721	10.387	1983	2	8.8	8.7022
18130000	L	5	4	1	7.721	10.387	1986	5	8.0	8.0740
18130000	L	5	4	1	7.721	10.387	1987	6	8.0	8.0522
18130000	L	5	4	1	7.721	10.387	1988	7	8.0	8.0492
18130000	L	5	4	1	7.721	10.387	1989	8	8.0	8.0200
18130000	L	5	4	1	7.721	10.387	1990	9	8.0	7.9196
18130000	L	5	4	1	7.721	10.387	1991	10	8.0	7.7030
18130000	L	5	4	1	7.721	10.387	1992	11	7.0	7.3252
18130000	L	5	4	1	7.721	10.387	1993	12	6.5	6.7412
18130000	L	5	4	1	7.721	10.387	1994	13	6.0	5.9060
26020000	R	2	1	7	24.218	25.220	1983	1	8.3	8.8370
26020000	R	2	1	1	24.218	25.220	1986	4	8.8	8.7894
26020000	R	2	1	1	24.218	25.220	1987	5	8.9	8.6532
26020000	R	2	1	1	24.218	25.220	1988	6	8.5	8.4434
26020000	R	2	1	1	24.218	25.220	1989	7	8.6	8.2982
26020000	R	2	1	1	24.218	25.220	1990	8	8.1	8.1750
26020000	R	2	1	1	24.218	25.220	1991	9	7.9	7.8630
26020000	R	2	1	1	24.218	25.220	1992	10	7.9	7.5224
26020000	R	2	1	1	24.218	25.220	1993	11	7.8	7.1682
26020000	R	2	1	1	24.218	25.220	1994	12	7.9	6.8154
26020000	L	2	1	7	24.218	25.220	1983	1	8.5	9.9949
26020000	L	2	1	1	24.218	25.220	1986	4	8.7	8.8005
26020000	L	2	1	1	24.218	25.220	1987	5	9.0	8.7898
26020000	L	2	1	1	24.218	25.220	1988	6	8.6	8.7464
26020000	L	2	1	1	24.218	25.220	1989	7	8.5	8.4649
26020000	L	2	1	1	24.218	25.220	1990	8	7.8	7.7934
26080000	C	2	1	1	5.050	11.362	1979	4	9.0	8.3284
26080000	C	2	1	1	5.050	11.362	1981	6	8.0	7.7060
26080000	C	2	1	1	5.050	11.362	1982	7	7.0	7.4854
26080000	C	2	1	1	5.050	11.362	1983	8	7.0	7.3132
26080000	C	2	1	1	5.050	11.362	1986	11	7.0	6.9970

Table B -- Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
26080000	C	2	1	1	5.050	11.362	1987	12	7.0	6.9284
26080000	C	2	1	1	5.050	11.362	1988	13	7.0	6.8632
26080000	C	2	1	1	5.050	11.362	1989	14	7.0	6.7924
26080000	C	2	1	1	5.050	11.362	1990	15	7.0	6.7070
26090000	C	2	1	7	2.990	7.651	1986	1	8.6	8.7171
26090000	C	2	1	1	2.990	7.651	1987	2	8.9	8.6547
26090000	C	2	1	1	2.990	7.651	1988	3	8.5	8.5802
26090000	C	2	1	1	2.990	7.651	1989	4	8.5	8.4912
26090000	C	2	1	1	2.990	7.651	1990	5	8.3	8.3856
26090000	C	2	1	1	2.990	7.651	1991	6	8.2	8.2608
26090000	C	2	1	1	2.990	7.651	1992	7	8.2	8.1145
26090000	C	2	1	1	2.990	7.651	1993	8	8.1	7.9445
26090000	C	2	1	1	2.990	7.651	1994	9	7.7	7.7484
26260000	L	2	4	1	0.000	0.978	1981	1	9.0	8.9680
26260000	L	2	4	1	0.000	0.978	1982	2	9.0	8.9476
26260000	L	2	4	1	0.000	0.978	1983	3	8.7	8.9276
26260000	L	2	4	1	0.000	0.978	1986	6	8.8	8.4416
26260000	L	2	4	1	0.000	0.978	1987	7	8.0	8.1580
26260000	L	2	4	1	0.000	0.978	1988	8	8.0	7.8136
26260000	L	2	4	1	0.000	0.978	1989	9	7.0	7.4084
26260000	L	2	4	1	0.000	0.978	1990	10	7.0	6.9424
26260000	L	2	4	1	0.000	0.978	1991	11	6.5	6.4156
26260000	L	2	4	1	9.740	11.005	1981	1	9.0	8.9773
26260000	L	2	4	1	9.740	11.005	1982	2	9.0	8.9521
26260000	L	2	4	1	9.740	11.005	1983	3	8.7	8.9241
26260000	L	2	4	1	9.740	11.005	1986	6	8.8	8.4481
26260000	L	2	4	1	9.740	11.005	1987	7	8.0	8.1513
26260000	L	2	4	1	9.740	11.005	1988	8	8.0	7.7971
26260000	L	2	4	1	9.740	11.005	1989	9	7.0	7.3897
26260000	L	2	4	1	9.740	11.005	1990	10	7.0	6.9333
26260000	L	2	4	1	9.740	11.005	1991	11	6.5	6.4321
26260000	R	2	4	7	14.576	19.071	1988	1	8.8	9.4839
26260000	R	2	4	1	14.576	19.071	1989	2	8.8	9.0396
26260000	R	2	4	1	14.576	19.071	1990	3	8.5	8.8285
26260000	R	2	4	1	14.576	19.071	1991	4	8.8	8.7180
26260000	R	2	4	1	14.576	19.071	1992	5	7.9	8.5755
26260000	R	2	4	1	14.576	19.071	1993	6	8.3	8.2684
26260000	L	2	4	7	26.207	30.000	1982	1	9.0	8.9751
26260000	L	2	4	1	26.207	30.000	1983	2	8.0	8.1387
26260000	L	2	4	1	26.207	30.000	1986	5	8.0	8.0856
26260000	L	2	4	1	26.207	30.000	1987	6	8.0	8.0532
26260000	L	2	4	1	26.207	30.000	1988	7	8.0	7.8735
26260000	L	2	4	1	26.207	30.000	1989	8	8.0	7.8558
26260000	L	2	4	1	26.207	30.000	1990	9	7.0	7.0599
27010000	C	2	1	7	10.088	11.900	1982	1	9.0	9.1116
27010000	C	2	1	1	10.088	11.900	1983	2	9.0	8.8353
27010000	C	2	1	1	10.088	11.900	1986	5	8.3	8.3796
27010000	C	2	1	1	10.088	11.900	1987	6	8.5	8.2961
27010000	C	2	1	1	10.088	11.900	1988	7	8.0	8.2188
27010000	C	2	1	1	10.088	11.900	1989	8	8.0	8.1309
27010000	C	2	1	1	10.088	11.900	1990	9	8.0	8.0156
27010000	C	2	1	1	10.088	11.900	1991	10	8.0	7.6561
27010000	C	2	1	1	10.088	11.900	1992	11	7.9	7.6356

Table B -- Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
27010000	C	2	1	1	10.088	11.900	1993	12	7.0	7.3373
27010000	C	2	1	1	10.088	11.900	1994	13	7.0	6.9444
27090000	L	2	4	7	0.000	8.884	1986	1	9.1	8.8384
27090000	L	2	4	1	0.000	8.884	1987	2	8.0	8.7357
27090000	L	2	4	1	0.000	8.884	1988	3	9.0	8.6218
27090000	L	2	4	1	0.000	8.884	1989	4	9.0	8.4949
27090000	L	2	4	1	0.000	8.884	1990	5	8.0	8.3532
27090000	L	2	4	1	0.000	8.884	1991	6	8.0	8.1949
27090000	L	2	4	3	0.000	8.884	1992	7	8.0	8.0182
27090000	L	2	4	1	0.000	8.884	1993	8	8.0	7.8213
27090000	L	2	4	1	0.000	8.884	1994	9	8.0	7.6024
27090000	R	2	4	7	9.544	15.000	1987	1	9.0	9.1210
27090000	R	2	4	1	9.544	15.000	1988	2	9.0	8.7295
27090000	R	2	4	1	9.544	15.000	1989	3	9.0	8.4776
27090000	R	2	4	1	9.544	15.000	1990	4	8.0	8.2783
27090000	R	2	4	1	9.544	15.000	1991	5	8.0	8.0446
27090000	R	2	4	1	9.544	15.000	1992	6	8.0	7.6895
27090000	R	2	4	1	9.544	15.000	1993	7	7.0	7.1260
27090000	R	2	4	1	9.544	15.000	1994	8	7.0	6.2671
28020000	C	2	1	7	0.000	5.200	1982	1	8.8	8.9041
28020000	C	2	1	1	0.000	5.200	1983	2	8.7	8.5404
28020000	C	2	1	1	0.000	5.200	1986	5	8.0	8.0409
28020000	C	2	1	1	0.000	5.200	1987	6	8.0	8.0036
28020000	C	2	1	1	0.000	5.200	1988	7	8.0	8.0004
28020000	C	2	1	1	0.000	5.200	1989	8	8.0	7.9969
28020000	C	2	1	1	0.000	5.200	1990	9	8.0	7.9937
28020000	C	2	1	1	0.000	5.200	1991	10	8.0	7.9564
28020000	C	2	1	1	0.000	5.200	1992	11	8.0	7.8681
28020000	C	2	1	1	0.000	5.200	1993	12	7.8	7.7084
28020000	C	2	1	1	0.000	5.200	1994	13	7.5	7.4569
29020000	C	2	1	1	15.922	18.651	1981	1	9.3	9.1972
29020000	C	2	1	1	15.922	18.651	1982	2	9.0	9.0673
29020000	C	2	1	1	15.922	18.651	1983	3	8.9	8.8928
29020000	C	2	1	1	15.922	18.651	1986	6	8.9	8.9728
29020000	C	2	1	1	15.922	18.651	1987	7	9.0	8.9683
29020000	C	2	1	1	15.922	18.651	1988	8	9.0	8.9637
29020000	C	2	1	1	15.922	18.651	1989	9	8.9	8.9364
29020000	C	2	1	1	15.922	18.651	1990	10	9.0	8.8633
29020000	C	2	1	1	15.922	18.651	1991	11	8.9	8.7352
29020000	C	2	1	1	15.922	18.651	1992	12	8.0	8.5383
29020000	C	2	1	1	15.922	18.651	1993	13	8.0	8.2588
29020000	C	2	1	1	15.922	18.651	1994	14	8.0	7.8829
29020000	C	2	1	1	18.956	22.077	1981	1	9.0	8.9424
29020000	C	2	1	1	18.956	22.077	1982	2	8.8	8.8281
29020000	C	2	1	1	18.956	22.077	1983	3	8.7	8.7650
29020000	C	2	1	1	18.956	22.077	1986	6	8.7	8.7606
29020000	C	2	1	1	18.956	22.077	1987	7	8.8	8.7555
29020000	C	2	1	1	18.956	22.077	1988	8	8.8	8.7509
29020000	C	2	1	1	18.956	22.077	1989	9	8.7	8.7224
29020000	C	2	1	1	18.956	22.077	1990	10	8.8	8.6481
29020000	C	2	1	1	18.956	22.077	1991	11	8.4	8.5194
29020000	C	2	1	1	18.956	22.077	1992	12		8.3231
29020000	C	2	1	1	18.956	22.077	1993	13	7.8	8.0460
29020000	C	2	1	1	18.956	22.077	1994	14	7.8	7.6749

Table B – Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
29170000	L	2	4	7	0.000	1.846	1986	1	9.0	9.1566
29170000	L	2	4	1	0.000	1.846	1987	2	9.0	8.8539
29170000	L	2	4	1	0.000	1.846	1988	3	9.0	8.5950
29170000	L	2	4	1	0.000	1.846	1989	4	8.0	8.3751
29170000	L	2	4	1	0.000	1.846	1990	5	8.0	8.1894
29170000	L	2	4	1	0.000	1.846	1991	6	8.0	8.0331
29170000	L	2	4	1	0.000	1.846	1992	7	8.0	7.9014
29170000	L	2	4	1	0.000	1.846	1993	8	8.7	7.7895
29170000	L	2	4	1	0.000	1.846	1994	9	7.5	7.6926
29170000	R	2	4	7	0.000	1.846	1986	1	9.0	9.2091
29170000	R	2	4	1	0.000	1.846	1987	2	8.9	8.7352
29170000	R	2	4	1	0.000	1.846	1988	3	9.0	8.4647
29170000	R	2	4	1	0.000	1.846	1989	4	8.0	8.3388
29170000	R	2	4	1	0.000	1.846	1990	5	8.0	8.2987
29170000	R	2	4	1	0.000	1.846	1991	6	8.0	8.2856
29170000	R	2	4	1	0.000	1.846	1992	7	8.5	8.2407
29170000	R	2	4	1	0.000	1.846	1993	8	8.5	8.1052
29170000	R	2	4	1	0.000	1.846	1994	9	7.5	7.8203
29180000	L	2	4	7	0.164	2.145	1987	1	8.8	8.8905
29180000	L	2	4	1	0.164	2.145	1988	2	9.0	8.6668
29180000	L	2	4	1	0.164	2.145	1989	3	8.0	8.3743
29180000	L	2	4	1	0.164	2.145	1990	4	8.0	8.0298
29180000	L	2	4	1	0.164	2.145	1991	5	8.0	7.6501
29180000	L	2	4	1	0.164	2.145	1992	6	7.0	7.2520
29180000	L	2	4	1	0.164	2.145	1993	7	7.0	6.8523
29180000	L	2	4	1	0.164	2.145	1994	8	7.0	6.4678
29180000	R	2	4	7	3.416	4.531	1987	1	8.9	9.0754
29180000	R	2	4	1	3.416	4.531	1988	2	9.0	8.7301
29180000	R	2	4	1	3.416	4.531	1989	3	8.0	8.3250
29180000	R	2	4	1	3.416	4.531	1990	4	8.0	7.8877
29180000	R	2	4	1	3.416	4.531	1991	5	7.0	7.4458
29180000	R	2	4	1	3.416	4.531	1992	6	7.0	7.0269
29180000	R	2	4	1	26.000	27.000	1981	1	10.0	9.7695
29180000	R	2	4	1	26.000	27.000	1982	2	9.0	9.2436
29180000	R	2	4	1	26.000	27.000	1983	3	8.8	8.8889
29180000	R	2	4	1	26.000	27.000	1986	4	8.0	8.6640
29180000	R	2	4	1	26.000	27.000	1987	5	8.8	8.5275
29180000	R	2	4	1	26.000	27.000	1988	6	9.0	8.4380
29180000	R	2	4	1	26.000	27.000	1989	7	8.0	8.3541
29180000	R	2	4	1	26.000	27.000	1990	8	7.0	8.2344
29180000	R	2	4	1	26.000	27.000	1991	9	7.0	8.0375
29180000	R	2	4	1	26.000	27.000	1992	10	7.0	7.7220
30010000	R	2	1	7	1.880	2.755	1987	1	9.3	9.9373
30010000	R	2	1	1	1.880	2.755	1988	2	9.0	9.2046
30010000	R	2	1	1	1.880	2.755	1989	3	8.8	8.6557
30010000	R	2	1	1	1.880	2.755	1990	4	8.0	8.3326
30010000	R	2	1	1	1.880	2.755	1991	5	8.0	8.1885
30010000	R	2	1	1	1.880	2.755	1992	6	8.0	8.0878
30010000	R	2	1	1	1.880	2.755	1993	7	8.1	7.8061
30010000	R	2	1	1	1.880	2.755	1994	8	8.0	7.0302
30010000	L	2	1	7	2.769	3.419	1987	1	9.3	9.3045
30010000	L	2	1	1	2.769	3.419	1988	2	9.0	8.9465
30010000	L	2	1	1	2.769	3.419	1989	3	8.7	8.6661

Table B – Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
30010000	L	2	1	1	2.769	3.419	1990	4	8.0	8.4177
30010000	L	2	1	1	2.769	3.419	1991	5	8.6	8.1557
30010000	L	2	1	1	2.769	3.419	1992	6	8.0	7.8345
30010000	L	2	1	1	2.769	3.419	1993	7	7.0	7.4085
30010000	L	2	1	1	2.769	3.419	1994	8	7.0	6.8321
32100000	L	2	4	7	0.000	5.000	1982	1	9.0	9.7837
32100000	L	2	4	7	0.000	5.000	1983	2	8.9	7.6764
32100000	L	2	4	1	0.000	5.000	1986	5	6.0	6.4759
32100000	L	2	4	1	0.000	5.000	1987	6	6.0	6.3592
32100000	L	2	4	1	0.000	5.000	1988	7	6.0	6.2382
32100000	L	2	4	1	0.000	5.000	1989	8	6.0	6.1545
32100000	L	2	4	1	0.000	5.000	1990	9	6.0	5.3797
32100000	L	2	4	1	0.000	5.000	1991	10	4.5	3.6340
32100000	L	2	4	1	0.000	5.000	1992	11	0.0	0.7347
32100000	R	2	4	7	5.000	8.874	1982	1	8.0	8.7844
32100000	R	2	4	1	5.000	8.874	1983	2	8.9	7.6498
32100000	R	2	4	1	5.000	8.874	1986	5	7.0	7.4314
32100000	R	2	4	1	5.000	8.874	1987	6	7.0	7.3768
32100000	R	2	4	1	5.000	8.874	1988	7	7.0	7.2700
32100000	R	2	4	1	5.000	8.874	1989	8	7.0	6.8902
32100000	R	2	4	1	5.000	8.874	1990	9	6.0	5.7556
32100000	R	2	4	1	5.000	8.874	1991	10	4.5	3.7570
32100000	R	2	4	1	5.000	8.874	1992	11	0.0	0.6784
32100000	L	2	4	1	9.079	10.280	1981	1	10.0	10.0000
32100000	L	2	4	7	9.079	10.280	1982	2	9.0	8.7962
32100000	L	2	4	7	9.079	10.280	1983	3	8.9	7.6338
32100000	L	2	4	1	9.079	10.280	1986	6	6.0	6.6846
32100000	L	2	4	1	9.079	10.280	1987	7	6.0	6.6542
32100000	L	2	4	1	9.079	10.280	1988	8	6.0	6.4868
32100000	L	2	4	1	9.079	10.280	1989	9	6.0	6.0144
32100000	L	2	4	1	9.079	10.280	1990	10	6.0	5.0690
32100000	L	2	4	1	9.079	10.280	1991	11	4.5	3.4826
32100000	L	2	4	1	9.079	10.280	1992	12	0.0	1.0872
32100000	R	2	4	1	20.000	25.000	1981	1	9.0	8.5288
32100000	R	2	4	1	20.000	25.000	1982	2	8.0	8.4037
32100000	R	2	4	1	20.000	25.000	1983	3	8.0	8.3196
32100000	R	2	4	1	20.000	25.000	1986	6	8.0	8.0913
32100000	R	2	4	1	20.000	25.000	1987	7	8.0	7.9492
32100000	R	2	4	1	20.000	25.000	1988	8	8.0	7.7371
32100000	R	2	4	1	20.000	25.000	1989	9	8.0	7.4328
32100000	R	2	4	1	20.000	25.000	1990	10	7.0	7.0141
32100000	R	2	4	1	20.000	25.000	1991	11	7.0	6.4588
32100000	R	2	4	1	20.000	25.000	1992	12	4.5	5.7447
32100000	R	2	4	1	20.000	25.000	1993	13	4.5	4.8496
32100000	R	2	4	1	20.000	25.000	1994	14	4.5	3.7513
32100000	R	2	4	1	25.000	28.700	1981	1	9.0	8.5287
32100000	R	2	4	1	25.000	28.700	1982	2	8.0	8.4036
32100000	R	2	4	1	25.000	28.700	1983	3	8.0	8.3195
32100000	R	2	4	1	25.000	28.700	1986	6	8.0	8.0912
32100000	R	2	4	1	25.000	28.700	1987	7	8.0	7.9491
32100000	R	2	4	1	25.000	28.700	1988	8	8.0	7.7370
32100000	R	2	4	1	25.000	28.700	1989	9	8.0	7.4327
32100000	R	2	4	1	25.000	28.700	1990	10	7.0	7.0140
32100000	R	2	4	1	25.000	28.700	1991	11	7.0	6.4587

Table B – Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
32100000	R	2	4	1	25.000	28.700	1992	12	4.5	5.7446
32100000	R	2	4	1	25.000	28.700	1993	13	4.5	4.8495
32100000	R	2	4	1	25.000	28.700	1994	14	4.5	3.7512
34030000	C	2	1	7	0.169	8.224	1983	1	8.6	8.5724
34030000	C	2	1	1	0.169	8.224	1986	4	8.1	8.3261
34030000	C	2	1	1	0.169	8.224	1987	5	8.5	8.2428
34030000	C	2	1	1	0.169	8.224	1988	6	8.1	8.1569
34030000	C	2	1	1	0.169	8.224	1989	7	8.0	8.0672
34030000	C	2	1	1	0.169	8.224	1990	8	8.0	7.9725
34030000	C	2	1	1	0.169	8.224	1991	9	8.0	7.8716
34030000	C	2	1	1	0.169	8.224	1992	10	7.5	7.7633
34030000	C	2	1	1	0.169	8.224	1993	11	7.6	7.6464
34030000	C	2	1	1	0.169	8.224	1994	12	7.5	7.5197
34070000	C	2	1	1	3.376	9.303	1978	1	7.9	8.62686
34070000	C	2	1	1	3.376	9.303	1979	2	8.6	8.61355
34070000	C	2	1	1	3.376	9.303	1981	4	8.6	8.6096
34070000	C	2	1	1	3.376	9.303	1982	5	8.7	8.5855
34070000	C	2	1	1	3.376	9.303	1983	6	8.6	8.5792
34070000	C	2	1	1	3.376	9.303	1986	9	8.1	8.4127
34070000	C	2	1	1	3.376	9.303	1987	10	8.7	8.3253
34070000	C	2	1	1	3.376	9.303	1988	11	8.3	8.2229
34070000	C	2	1	1	3.376	9.303	1989	12	8.0	8.1054
34070000	C	2	1	1	3.376	9.303	1990	13	8.0	7.9728
34070000	C	2	1	1	3.376	9.303	1991	14	8.0	7.8251
34070000	C	2	1	1	3.376	9.303	1992	15	7.7	7.6621
34070000	C	2	1	1	3.376	9.303	1993	16	7.8	7.4837
34070000	C	2	1	1	3.376	9.303	1994	17	8.8	7.2901
35090000	R	2	4	7	11.372	15.000	1988	1	9.0	8.9773
35090000	R	2	4	1	11.372	15.000	1989	2	8.0	8.5999
35090000	R	2	4	1	11.372	15.000	1990	3	8.0	8.3339
35090000	R	2	4	1	11.372	15.000	1991	4	8.0	8.1361
35090000	R	2	4	1	11.372	15.000	1992	5	8.0	7.9633
35090000	R	2	4	1	11.372	15.000	1993	6	8.3	7.7723
35090000	R	2	4	1	11.372	15.000	1994	7	8.1	7.5199
35090000	L	2	4	7	15.000	16.941	1988	1	9.0	9.0524
35090000	L	2	4	1	15.000	16.941	1989	2	8.8	8.8358
35090000	L	2	4	1	15.000	16.941	1990	3	8.8	8.6216
35090000	L	2	4	1	15.000	16.941	1991	4	8.5	8.4098
35090000	L	2	4	1	15.000	16.941	1992	5	8.0	8.2004
35090000	L	2	4	1	15.000	16.941	1993	6	7.9	7.9934
35090000	L	2	4	1	15.000	16.941	1994	7	7.9	7.7888
36002000	L	5	1	1	0.277	4.910	1981	1	8.9	8.9417
36002000	L	5	1	1	0.277	4.910	1982	2	8.9	8.8090
36002000	L	5	1	1	0.277	4.910	1983	3	8.6	8.6959
36002000	L	5	1	1	0.277	4.910	1986	6	8.8	8.4142
36002000	L	5	1	1	0.277	4.910	1987	7	8.0	8.3195
36002000	L	5	1	1	0.277	4.910	1988	8	8.0	8.2144
36002000	L	5	1	1	0.277	4.910	1989	9	8.0	8.0929
36002000	L	5	1	1	0.277	4.910	1990	10	8.0	7.9490
36002000	L	5	1	1	0.277	4.910	1991	11	8.0	7.7767
36002000	L	5	1	1	0.277	4.910	1992	12	7.5	7.5700
36002000	L	5	1	1	0.277	4.910	1993	13	7.0	7.3229
36002000	L	5	1	1	0.277	4.910	1994	14	7.0	7.0294

Table B – Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
36010000	R	5	1	1	22.997	23.783	1979	1	7.5	8.4361
36010000	R	5	1	1	22.997	23.783	1981	3	8.0	8.0999
36010000	R	5	1	1	22.997	23.783	1982	4	8.0	8.0191
36010000	R	5	1	1	22.997	23.783	1983	5	8.0	7.9841
36010000	R	5	1	1	22.997	23.783	1986	8	8.0	7.9839
36010000	R	5	1	1	22.997	23.783	1987	9	8.5	7.9797
36010000	R	5	1	1	22.997	23.783	1988	10	8.5	7.9627
36010000	R	5	1	1	22.997	23.783	1989	11	8.0	7.9071
36010000	R	5	1	1	22.997	23.783	1990	12	7.9	7.8047
36010000	R	5	1	1	22.997	23.783	1991	13	8.0	7.6429
36010000	R	5	1	1	22.997	23.783	1992	14	7.0	7.4091
36010000	R	5	1	1	22.997	23.783	1993	15	7.0	7.0907
36010000	R	5	1	1	22.997	23.783	1994	16	7.0	6.6751
36050000	C	5	1	1	0.000	3.718	1983	1	8.0	8.4515
36050000	C	5	1	1	0.000	3.718	1986	4	8.4	8.4396
36050000	C	5	1	1	0.000	3.718	1987	5	8.4	8.3894
36050000	C	5	1	1	0.000	3.718	1988	6	8.5	8.2509
36050000	C	5	1	1	0.000	3.718	1989	7	8.1	8.0336
36050000	C	5	1	1	0.000	3.718	1990	8	8.2	7.9839
36050000	C	5	1	1	0.000	3.718	1991	9		7.7351
36050000	C	5	1	1	0.000	3.718	1992	10	7.5	7.353
36050000	C	5	1	1	0.000	3.718	1993	11	6.5	6.8849
36050000	C	5	1	1	0.000	3.718	1994	12	6.5	6.3284
36070000	L	5	1	1	14.084	17.068	1982	1	8.8	8.7964
36070000	L	5	1	1	14.084	17.068	1983	2	8.6	8.7703
36070000	L	5	1	1	14.084	17.068	1986	5	8.9	8.7219
36070000	L	5	1	1	14.084	17.068	1987	6	8.8	8.7064
36070000	L	5	1	1	14.084	17.068	1988	7	8.5	8.5918
36070000	L	5	1	1	14.084	17.068	1989	8	8.5	8.3977
36070000	L	5	1	1	14.084	17.068	1990	9	8.0	8.1312
36070000	L	5	1	1	14.084	17.068	1991	10	7.5	7.7839
36070000	L	5	1	1	14.084	17.068	1992	11	7.5	7.3474
36070000	L	5	1	1	14.084	17.068	1993	12	7.0	6.8133
36070000	L	5	1	1	14.084	17.068	1994	13	6.0	6.1732
36080000	C	5	1	7	8.205	9.345	1983	1	8.2	8.2394
36080000	C	5	1	1	8.205	9.345	1986	4	8.3	8.2034
36080000	C	5	1	1	8.205	9.345	1987	5	8.0	8.1018
36080000	C	5	1	1	8.205	9.345	1988	6	8.0	7.8994
36080000	C	5	1	1	8.205	9.345	1989	7	7.5	7.6382
36080000	C	5	1	1	8.205	9.345	1990	8	7.5	7.3242
36080000	C	5	1	1	8.205	9.345	1991	9	6.0	6.9634
36080000	C	5	1	1	8.205	9.345	1992	10	6.5	6.5618
36080000	C	5	1	1	8.205	9.345	1993	11	6.5	6.1254
36080000	C	5	1	1	8.205	9.345	1994	12	6.5	5.6602
36110000	L	5	1	1	24.113	24.900	1981	1	8.6	8.9511
36110000	L	5	1	1	24.113	24.900	1982	2	9.0	8.6837
36110000	L	5	1	1	24.113	24.900	1983	3	8.8	8.4899
36110000	L	5	1	1	24.113	24.900	1986	6	8.0	8.2001
36110000	L	5	1	1	24.113	24.900	1987	7	8.0	8.1507
36110000	L	5	1	1	24.113	24.900	1988	8	8.0	8.0999
36110000	L	5	1	1	24.113	24.900	1989	9	8.0	8.0327
36110000	L	5	1	1	24.113	24.900	1990	10	8.0	7.9341
36110000	L	5	1	1	24.113	24.900	1991	11	8.0	7.7891
36110000	L	5	1	1	24.113	24.900	1992	12	8.1	7.5827
36110000	L	5	1	1	24.113	24.900	1993	13	7.0	7.2999

Table B – Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
36110000	L	5	1	1	24.113	24.900	1994	14	7.0	6.9257
36210000	R	5	4	1	0.000	4.947	1982	1	9.3	9.1284
36210000	R	5	4	1	0.000	4.947	1983	2	8.8	9.0227
36210000	R	5	4	1	0.000	4.947	1986	5	9.0	8.6912
36210000	R	5	4	1	0.000	4.947	1987	6	8.0	8.5019
36210000	R	5	4	1	0.000	4.947	1988	7	8.0	8.2362
36210000	R	5	4	1	0.000	4.947	1989	8	8.0	7.8719
36210000	R	5	4	1	0.000	4.947	1990	9	8.0	7.3868
36210000	R	5	4	1	0.000	4.947	1991	10	8.0	6.7587
36210000	R	5	4	1	0.000	4.947	1992	11	4.5	5.9654
36210000	R	5	4	1	0.000	4.947	1993	12	4.5	4.9847
36210000	R	5	4	1	0.000	4.947	1994	13	4.5	3.7944
36210000	L	5	4	1	0.000	4.947	1982	1	9.2	9.0999
36210000	L	5	4	1	0.000	4.947	1983	2	8.8	8.9785
36210000	L	5	4	1	0.000	4.947	1986	5	9.0	8.5739
36210000	L	5	4	1	0.000	4.947	1987	6	8.0	8.4079
36210000	L	5	4	1	0.000	4.947	1988	7	8.0	8.2185
36210000	L	5	4	1	0.000	4.947	1989	8	8.0	8.0009
36210000	L	5	4	1	0.000	4.947	1990	9	8.0	7.7503
36210000	L	5	4	1	0.000	4.947	1991	10	8.0	7.4619
36210000	L	5	4	1	0.000	4.947	1992	11	6.5	7.1309
36210000	L	5	4	1	0.000	4.947	1993	12	6.5	6.7525
36210000	L	5	4	1	0.000	4.947	1994	13	6.5	6.3219
37120000	R	2	4	7	6.465	14.220	1987	1	9.0	9.0970
37120000	R	2	4	1	6.465	14.220	1988	2	8.9	8.6025
37120000	R	2	4	1	6.465	14.220	1989	3	8.0	8.2874
37120000	R	2	4	1	6.465	14.220	1990	4	8.0	8.0155
37120000	R	2	4	1	6.465	14.220	1991	5	8.0	7.6506
37120000	R	2	4	1	6.465	14.220	1992	6	6.5	7.0565
37120000	R	2	4	1	6.465	14.220	1993	7	6.5	6.0970
37120000	R	2	4	1	6.465	14.220	1994	8	4.5	4.6359
37120000	L	2	4	7	6.465	14.220	1987	1	9.0	9.1667
37120000	L	2	4	1	6.465	14.220	1988	2	9.0	8.6309
37120000	L	2	4	1	6.465	14.220	1989	3	8.0	8.2021
37120000	L	2	4	1	6.465	14.220	1990	4	8.0	7.7969
37120000	L	2	4	1	6.465	14.220	1991	5	7.0	7.3319
37120000	L	2	4	1	6.465	14.220	1992	6	6.5	6.7237
37120000	L	2	4	1	6.465	14.220	1993	7	6.5	5.8889
37120000	L	2	4	1	6.465	14.220	1994	8	4.5	4.7441
46040000	L	3	1	1	1.120	4.072	1987	1	8.2	8.2894
46040000	L	3	1	1	1.120	4.072	1988	2	8.5	8.2575
46040000	L	3	1	1	1.120	4.072	1989	3	8.0	8.1912
46040000	L	3	1	1	1.120	4.072	1990	4	8.0	8.0131
46040000	L	3	1	1	1.120	4.072	1991	5	7.9	7.6458
46040000	L	3	1	1	1.120	4.072	1992	6	6.5	7.0119
46040000	L	3	1	1	1.120	4.072	1993	7	6.5	6.0340
46040000	L	3	1	1	1.120	4.072	1994	8	4.5	4.6347
46040000	R	3	1	1	25.525	31.028	1979	1	8.4	8.5477
46040000	R	3	1	1	25.525	31.028	1981	3	8.7	8.5382
46040000	R	3	1	1	25.525	31.028	1982	4	8.0	8.3997
46040000	R	3	1	1	25.525	31.028	1983	5	8.0	8.1389
46040000	R	3	1	1	25.525	31.028	1986	8	7.0	7.3122
46040000	R	3	1	1	25.525	31.028	1987	9	7.0	6.7597

Table B – Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
46040000	R	3	1	1	25.525	31.028	1988	10	7.0	6.1292
46040000	R	3	1	1	25.525	31.028	1989	11	6.0	5.4309
46040000	R	3	1	1	25.525	31.028	1990	12	6.0	4.6750
46040000	R	3	1	1	25.525	31.028	1991	13	1.5	3.8717
46040000	R	3	1	1	25.525	31.028	1992	14	2.0	3.0312
46040000	R	3	1	1	25.525	31.028	1993	15	2.0	2.1637
46040000	R	3	1	1	25.525	31.028	1994	16	2.0	2.0000
46040000	R	3	1	1	31.200	31.890	1981	1	8.7	8.9565
46040000	R	3	1	1	31.200	31.890	1982	2	8.0	8.0402
46040000	R	3	1	1	31.200	31.890	1983	3	8.0	7.4437
46040000	R	3	1	1	31.200	31.890	1986	6	7.0	7.2541
46040000	R	3	1	1	31.200	31.890	1987	7	7.0	7.2330
46040000	R	3	1	1	31.200	31.890	1988	8	7.0	7.1792
46040000	R	3	1	1	31.200	31.890	1989	9	7.0	7.0677
46040000	R	3	1	1	31.200	31.890	1990	10	7.0	7.0565
46040000	R	3	1	1	31.200	31.890	1991	11	7.0	6.9790
46040000	R	3	1	1	31.200	31.890	1992	12	7.5	6.6652
46040000	R	3	1	1	31.200	31.890	1993	13	6.5	5.9997
46040000	R	3	1	1	31.200	31.890	1994	14	4.5	5.0006
46060000	C	3	1	1	9.320	11.955	1981	1	8.7	8.6298
46060000	C	3	1	1	9.320	11.955	1982	2	8.0	8.1832
46060000	C	3	1	1	9.320	11.955	1983	3	8.0	7.9480
46060000	C	3	1	1	9.320	11.955	1986	6	8.0	7.9290
46060000	C	3	1	1	9.320	11.955	1987	7	8.0	7.9242
46060000	C	3	1	1	9.320	11.955	1988	8	8.0	7.8906
46060000	C	3	1	1	9.320	11.955	1989	9	8.0	7.8648
46060000	C	3	1	1	9.320	11.955	1990	10	7.0	7.7064
46060000	C	3	1	1	9.320	11.955	1991	11	7.5	7.3498
46060000	C	3	1	1	9.320	11.955	1992	12	7.0	6.7752
46060000	C	3	1	1	9.320	11.955	1993	13	6.5	5.937
46060000	C	3	1	1	9.320	11.955	1994	14	4.5	4.7896
47010000	C	3	1	1	12.558	13.498	1976	1	8.0	8.1248
47010000	C	3	1	1	12.558	13.498	1977	2	8.0	7.7151
47010000	C	3	1	1	12.558	13.498	1978	3	7.0	7.4372
47010000	C	3	1	1	12.558	13.498	1979	4	7.8	7.2671
47010000	C	3	1	1	12.558	13.498	1981	6	7.0	7.1543
47010000	C	3	1	1	12.558	13.498	1982	7	7.0	7.1847
47010000	C	3	1	1	12.558	13.498	1983	8	7.0	7.1636
47010000	C	3	1	1	12.558	13.498	1986	11	7.5	7.0788
47010000	C	3	1	1	12.558	13.498	1987	12	7.5	6.9071
47010000	C	3	1	1	12.558	13.498	1988	13	6.0	6.6272
47010000	C	3	1	1	12.558	13.498	1989	14	6.0	6.2151
47010000	C	3	1	1	12.558	13.498	1990	15	6.0	5.6468
47010000	C	3	1	1	20.918	21.399	1986	1	8.1	8.9354
47010000	C	3	1	1	20.918	21.399	1987	2	7.8	8.6524
47010000	C	3	1	1	20.918	21.399	1988	3	8.0	8.4332
47010000	C	3	1	1	20.918	21.399	1989	4	7.7	8.2658
47010000	C	3	1	1	20.918	21.399	1990	5	8.0	8.1382
47010000	C	3	1	1	20.918	21.399	1991	6		8.0384
47010000	C	3	1	1	20.918	21.399	1992	7	7.9	7.9544
47010000	C	3	1	1	20.918	21.399	1993	8	7.4	7.8742
47010000	C	3	1	1	20.918	21.399	1994	9	7.2	7.7858
47040000	C	3	1	1	9.777	15.596	1986	1	8.3	8.9354
47040000	C	3	1	1	9.777	15.596	1987	2		8.6524

Table B – Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
47040000	C	3	1	1	9.777	15.596	1988	3	8.4332	
47040000	C	3	1	1	9.777	15.596	1989	4	8.0	8.2658
47040000	C	3	1	1	9.777	15.596	1990	5	8.0	8.1382
47040000	C	3	1	1	9.777	15.596	1991	6	8.0	8.0384
47040000	C	3	1	1	9.777	15.596	1992	7	8.1	7.9544
47040000	C	3	1	1	9.777	15.596	1993	8	8.3	7.8742
47040000	C	3	1	1	9.777	15.596	1994	9	8.1	7.7858
48020000	C	3	1	7	0.351	7.626	1987	1	8.9	8.9465
48020000	C	3	1	1	0.351	7.626	1988	2	8.8	8.6945
48020000	C	3	1	1	0.351	7.626	1989	3	8.6	8.6113
48020000	C	3	1	1	0.351	7.626	1990	4	8.5	8.6057
48020000	C	3	1	1	0.351	7.626	1991	5	8.6	8.5865
48020000	C	3	1	1	0.351	7.626	1992	6	8.5	8.4625
48020000	C	3	1	1	0.351	7.626	1993	7		8.1425
48020000	C	3	1	1	0.351	7.626	1994	8	7.5	7.5353
48020000	R	3	1	7	7.726	9.805	1987	1	8.7	9.3094
48020000	R	3	1	1	7.726	9.805	1988	2	9.0	8.9975
48020000	R	3	1	1	7.726	9.805	1989	3	8.9	8.8066
48020000	R	3	1	1	7.726	9.805	1990	4	8.5	8.7013
48020000	R	3	1	1	7.726	9.805	1991	5	8.1	8.6462
48020000	R	3	1	1	7.726	9.805	1992	6	8.8	8.6059
48020000	R	3	1	1	7.726	9.805	1993	7	9.0	8.5450
48020000	R	3	1	1	7.726	9.805	1994	8	9.0	8.4281
48040000	L	3	1	7	1.956	2.900	1983	1	8.1	8.0937
48040000	L	3	1	1	1.956	2.900	1987	5	7.9	7.9881
48040000	L	3	1	1	1.956	2.900	1988	6	7.9	7.7867
48040000	L	3	1	1	1.956	2.900	1989	7	7.4	7.5453
48040000	L	3	1	1	1.956	2.900	1990	8	7.4	7.2789
48040000	L	3	1	1	1.956	2.900	1991	9	7.0	7.0025
48040000	L	3	1	1	1.956	2.900	1992	10	6.5	6.7311
48040000	L	3	1	1	1.956	2.900	1993	11	6.5	6.4797
48040000	L	3	1	1	1.956	2.900	1994	12	6.5	6.2633
48070000	L	3	1	7	0.378	1.984	1983	1	8.2	8.4656
48070000	L	3	1	1	0.378	1.984	1986	4	8.2	8.3882
48070000	L	3	1	1	0.378	1.984	1987	5	7.6	8.3348
48070000	L	3	1	1	0.378	1.984	1988	6	8.5	8.2216
48070000	L	3	1	1	0.378	1.984	1989	7	8.0	8.051
48070000	L	3	1	1	0.378	1.984	1990	8	7.9	7.8254
48070000	L	3	1	1	0.378	1.984	1991	9	7.5	7.5472
48070000	L	3	1	1	0.378	1.984	1992	10	7.1	7.2188
48070000	L	3	1	1	0.378	1.984	1993	11	7.4	6.8426
49030000	C	3	1	1	0.000	5.139	1986	6	8.1	8.2023
49030000	C	3	1	1	0.000	5.139	1987	7	7.1	7.5769
49030000	C	3	1	1	0.000	5.139	1988	8	7.4	7.5737
49030000	C	3	1	1	0.000	5.139	1989	9	8.0	7.5493
49030000	C	3	1	1	0.000	5.139	1990	10	8.0	7.4929
49030000	C	3	1	1	0.000	5.139	1991	11	7.0	7.3937
49030000	C	3	1	1	0.000	5.139	1992	12	7.0	7.2409
49030000	C	3	1	1	0.000	5.139	1993	13	7.0	7.0237
49030000	C	3	1	1	0.000	5.139	1994	14	7.0	6.7313
50001000	R	3	4	1	1.278	11.896	1986	1	8.0	8.4894
50001000	R	3	4	1	1.278	11.896	1987	2	8.0	8.2553
50001000	R	3	4	1	1.278	11.896	1988	3	8.0	8.1228

Table B -- Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
50001000	R	3	4	1	1.278	11.896	1989	4	8.0	8.0313
50001000	R	3	4	1	1.278	11.896	1990	5	6.0	7.9202
50001000	R	3	4	1	1.278	11.896	1991	6	8.0	7.7289
50001000	R	3	4	1	1.278	11.896	1992	7	8.0	7.3968
50001000	R	3	4	1	1.278	11.896	1993	8	7.0	6.8633
50001000	L	3	4	1	1.278	11.896	1986	1	8.8	9.2227
50001000	L	3	4	1	1.278	11.896	1987	2	9.0	8.5050
50001000	L	3	4	1	1.278	11.896	1988	3	8.5	8.1111
50001000	L	3	4	1	1.278	11.896	1989	4	8.5	7.9342
50001000	L	3	4	1	1.278	11.896	1990	5	6.0	7.8675
50001000	L	3	4	1	1.278	11.896	1991	6	8.0	7.8042
50001000	L	3	4	1	1.278	11.896	1992	7	8.0	7.6375
50001000	L	3	4	1	1.278	11.896	1993	8	8.0	7.2606
50001000	L	3	4	1	1.278	11.896	1994	9	6.0	6.5667
50010000	C	3	1	7	1.012	1.829	1983	1	7.8	8.4852
50010000	C	3	1	1	1.012	1.829	1986	4	7.8	7.7982
50010000	C	3	1	1	1.012	1.829	1987	5	7.5	7.7396
50010000	C	3	1	1	1.012	1.829	1988	6	8.0	7.7222
50010000	C	3	1	1	1.012	1.829	1989	7	7.8	7.7196
50010000	C	3	1	1	1.012	1.829	1990	8		7.7054
50010000	C	3	1	1	1.012	1.829	1991	9	7.5	7.6532
50010000	C	3	1	1	1.012	1.829	1992	10	7.5	7.5366
50010000	C	3	1	1	1.012	1.829	1993	11	7.5	7.3292
50010000	C	3	1	1	1.012	1.829	1994	12	7.0	7.0046
50010000	L	3	1	1	16.530	18.470	1977	1	8.6	8.2951
50010000	L	3	1	1	16.530	18.470	1978	2	8.0	8.2705
50010000	L	3	1	1	16.530	18.470	1979	3	8.0	8.2167
50010000	L	3	1	1	16.530	18.470	1981	5	8.0	8.0359
50010000	L	3	1	1	16.530	18.470	1982	6	8.0	7.9161
50010000	L	3	1	1	16.530	18.470	1983	7	8.0	7.7815
50010000	L	3	1	1	16.530	18.470	1986	10	7.5	7.3249
50010000	L	3	1	1	16.530	18.470	1987	11	7.0	7.1671
50010000	L	3	1	1	16.530	18.470	1988	12	7.0	7.0125
50010000	L	3	1	1	16.530	18.470	1989	13	7.0	6.8647
50010000	L	3	1	1	16.530	18.470	1990	14		6.7273
50010000	L	3	1	1	16.530	18.470	1991	15	7.0	6.6039
50010000	L	3	1	1	16.530	18.470	1992	16	6.4	6.4981
50010000	L	3	1	1	16.530	18.470	1993	17	6.6	6.4135
50010000	L	3	1	1	16.530	18.470	1994	18	6.5	6.3537
50080000	C	3	1	1	0.000	11.438	1979	1		9.8742
50080000	C	3	1	1	0.000	11.438	1981	3	8.8	8.8706
50080000	C	3	1	1	0.000	11.438	1982	4	8.7	8.6646
50080000	C	3	1	1	0.000	11.438	1983	5	8.7	8.6610
50080000	C	3	1	1	0.000	11.438	1986	8	8.5	8.6390
50080000	C	3	1	1	0.000	11.438	1987	9	8.5	8.5830
50080000	C	3	1	1	0.000	11.438	1988	10	8.5	8.5080
50080000	C	3	1	1	0.000	11.438	1989	11	8.5	8.2242
50080000	C	3	1	1	0.000	11.438	1990	12	7.5	7.7402
50080000	C	3	1	1	13.643	14.707	1977	1	8.4	9.0680
50080000	C	3	1	1	13.643	14.707	1978	2	8.0	8.8973
50080000	C	3	1	1	13.643	14.707	1979	3		8.7646
50080000	C	3	1	1	13.643	14.707	1981	5	8.5	8.5916
50080000	C	3	1	1	13.643	14.707	1982	6	8.5	8.5405
50080000	C	3	1	1	13.643	14.707	1983	7		8.5058

Table B -- Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
50080000	C	3	1	1	13.643	14.707	1986	10	8.6	8.4461
50080000	C	3	1	1	13.643	14.707	1987	11	8.5	8.4230
50080000	C	3	1	1	13.643	14.707	1988	12	8.5	8.3893
50080000	C	3	1	1	13.643	14.707	1989	13	8.5	8.3396
50080000	C	3	1	1	13.643	14.707	1990	14	8.5	8.2685
50080000	C	3	1	1	13.643	14.707	1991	15	8.5	8.1706
50080000	C	3	1	1	13.643	14.707	1992	16	8.3	8.0405
50080000	C	3	1	1	13.643	14.707	1993	17	8.0	7.8728
50080000	C	3	1	1	13.643	14.707	1994	18	8.0	7.6621
52040000	C	3	1	9	1.900	11.166	1976	1	.	8.5849
52040000	C	3	1	1	1.900	11.166	1977	2	8.6	8.3863
52040000	C	3	1	1	1.900	11.166	1978	3	7.5	8.2401
52040000	C	3	1	1	1.900	11.166	1979	4	8.2	8.1349
52040000	C	3	1	1	1.900	11.166	1981	6	8.4	8.0019
52040000	C	3	1	1	1.900	11.166	1982	7	8.5	7.9513
52040000	C	3	1	1	1.900	11.166	1983	8	8.5	7.8961
52040000	C	3	1	1	1.900	11.166	1986	11	6.0	7.5889
52040000	C	3	1	1	1.900	11.166	1987	12	7.0	7.4013
52040000	C	3	1	1	1.900	11.166	1988	13	7.0	7.1521
52040000	C	3	1	1	1.900	11.166	1989	14	7.0	6.8299
52040000	C	3	1	1	1.900	11.166	1990	15	5.5	6.4233
52040000	C	3	1	1	1.900	11.166	1991	16	7.5	5.9209
52040000	C	3	1	1	1.900	11.166	1992	17	6.0	5.3113
52040000	C	3	1	1	1.900	11.166	1993	18	4.0	4.5831
52040000	C	3	1	1	1.900	11.166	1994	19	3.0	3.7249
53030000	R	3	1	1	14.020	16.200	1982	1	8.6	8.7702
53030000	R	3	1	1	14.020	16.200	1983	2	8.4	8.2919
53030000	R	3	1	1	14.020	16.200	1986	5	8.0	7.4234
53030000	R	3	1	1	14.020	16.200	1987	6	7.0	7.2507
53030000	R	3	1	1	14.020	16.200	1988	7	7.0	7.1004
53030000	R	3	1	1	14.020	16.200	1989	8	7.0	6.9509
53030000	R	3	1	1	14.020	16.200	1990	9	6.0	6.7806
53030000	R	3	1	1	14.020	16.200	1991	10	6.0	6.5679
53030000	R	3	1	1	14.020	16.200	1992	11	7.0	6.2912
53030000	R	3	1	1	14.020	16.200	1993	12	7.0	5.9289
53030000	R	3	1	1	14.020	16.200	1994	13	4.5	5.4594
53110000	C	3	1	1	8.527	9.800	1981	1	8.7	8.9156
53110000	C	3	1	1	8.527	9.800	1982	2	8.6	8.6110
53110000	C	3	1	1	8.527	9.800	1983	3	8.9	8.3184
53110000	C	3	1	1	8.527	9.800	1986	6	7.0	7.5066
53110000	C	3	1	1	8.527	9.800	1987	7	7.0	7.2560
53110000	C	3	1	1	8.527	9.800	1988	8	7.0	7.0144
53110000	C	3	1	1	8.527	9.800	1989	9	7.0	6.7812
53110000	C	3	1	1	8.527	9.800	1990	10	7.0	6.5558
53110000	C	3	1	1	8.527	9.800	1991	11	6.0	6.3376
53110000	C	3	1	1	8.527	9.800	1992	12	6.0	6.1260
53110000	C	3	1	1	8.527	9.800	1993	13	6.5	5.9204
53110000	C	3	1	1	8.527	9.800	1994	14	6.5	5.7202
55020000	L	3	1	1	1.277	3.340	1976	1	8.1	7.9866
55020000	L	3	1	1	1.277	3.340	1977	2	7.9	7.9532
55020000	L	3	1	1	1.277	3.340	1978	3	7.6	7.9348
55020000	L	3	1	1	1.277	3.340	1979	4	7.9	7.9276
55020000	L	3	1	1	1.277	3.340	1981	6	8.5	7.9272
55020000	L	3	1	1	1.277	3.340	1982	7	7.9	7.9272
55020000	L	3	1	1	1.277	3.340	1983	8	8.0	7.9208

Table B -- Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
55020000	L	3	1	1	1.277	3.340	1986	11	7.8	7.8236
55020000	L	3	1	1	1.277	3.340	1987	12	7.5	7.7512
55020000	L	3	1	1	1.277	3.340	1988	13	7.4	7.6518
55020000	L	3	1	1	1.277	3.340	1989	14	7.5	7.5212
55020000	L	3	1	1	1.277	3.340	1990	15	7.5	7.3552
55020000	L	3	1	1	1.277	3.340	1991	16	7.5	7.1496
55020000	L	3	1	1	1.277	3.340	1992	17	7.5	6.9002
55020000	L	3	1	1	1.277	3.340	1993	18	7.0	6.6028
55020000	L	3	1	1	1.277	3.340	1994	19	6.0	6.2532
55050000	R	3	1	1	2.001	2.467	1981	1	8.8	9.0093
55050000	R	3	1	1	2.001	2.467	1982	2	8.2	8.7167
55050000	R	3	1	1	2.001	2.467	1983	3	7.7	8.5213
55050000	R	3	1	1	2.001	2.467	1986	6	7.7	8.3203
55050000	R	3	1	1	2.001	2.467	1987	7	8.3	8.3157
55050000	R	3	1	1	2.001	2.467	1988	8	7.9	8.3093
55050000	R	3	1	1	2.001	2.467	1989	9	8.1	8.2813
55050000	R	3	1	1	2.001	2.467	1990	10	8.3	8.2119
55050000	R	3	1	1	2.001	2.467	1991	11	8.0	8.0813
55050000	R	3	1	1	2.001	2.467	1992	12	8.0	7.8697
55050000	R	3	1	1	2.001	2.467	1993	13	8.0	7.5573
55050000	R	3	1	1	2.001	2.467	1994	14	7.0	7.1243
55050000	L	3	1	1	2.001	2.467	1981	1	9.3	9.2434
55050000	L	3	1	1	2.001	2.467	1982	2	8.5	8.8463
55050000	L	3	1	1	2.001	2.467	1983	3	8.3	8.5768
55050000	L	3	1	1	2.001	2.467	1986	6	8.1	8.3033
55050000	L	3	1	1	2.001	2.467	1987	7	8.5	8.2954
55050000	L	3	1	1	2.001	2.467	1988	8	8.6	8.2948
55050000	L	3	1	1	2.001	2.467	1989	9	8.3	8.2939
55050000	L	3	1	1	2.001	2.467	1990	10	8.5	8.2471
55050000	L	3	1	1	2.001	2.467	1991	11	8.0	8.1344
55050000	L	3	1	1	2.001	2.467	1992	12	8.0	7.9333
55050000	L	3	1	1	2.001	2.467	1993	13	7.6198	
55050000	L	3	1	1	2.001	2.467	1994	14	8.0	7.1699
56010000	C	3	1	1	1.673	4.223	1976	1	8.0	8.9435
56010000	C	3	1	1	1.673	4.223	1977	2	8.0	8.2872
56010000	C	3	1	1	1.673	4.223	1978	3	7.0	7.8169
56010000	C	3	1	1	1.673	4.223	1979	4	7.0	7.5032
56010000	C	3	1	1	1.673	4.223	1981	6	7.0	7.2280
56010000	C	3	1	1	1.673	4.223	1982	7	7.0	7.2264
56010000	C	3	1	1	1.673	4.223	1983	8	7.0	7.2225
56010000	C	3	1	1	1.673	4.223	1986	11	7.0	7.2077
56010000	C	3	1	1	1.673	4.223	1987	12	7.0	7.1032
56010000	C	3	1	1	1.673	4.223	1988	13	7.0	6.8759
56010000	C	3	1	1	1.673	4.223	1989	14	6.0	6.5112
56010000	C	3	1	1	1.673	4.223	1990	15	6.0	5.9797
56010000	C	3	1	1	1.673	4.223	1991	16	5.0	5.2520
56010000	C	3	1	1	1.673	4.223	1992	17	5.5	4.2987
56010000	C	3	1	1	1.673	4.223	1993	18	3.5	3.0904
56010000	C	3	1	1	1.673	4.223	1994	19	0.0	1.5977
56010000	C	3	1	1	9.400	12.497	1982	1	8.9	8.6985
56010000	C	3	1	1	9.400	12.497	1983	2	8.1	8.3918
56010000	C	3	1	1	9.400	12.497	1986	5	8.0	7.9829
56010000	C	3	1	1	9.400	12.497	1987	6	8.0	7.9530
56010000	C	3	1	1	9.400	12.497	1988	7	8.0	7.9443
56010000	C	3	1	1	9.400	12.497	1989	8	8.0	7.9376

Table B -- Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
56010000	C	3	1	1	9.400	12.497	1990	9	8.0	7.9137
56010000	C	3	1	1	9.400	12.497	1991	10	8.0	7.8534
56010000	C	3	1	1	9.400	12.497	1992	11	7.5	7.7375
56010000	C	3	1	1	9.400	12.497	1993	12	7.5	7.5468
56010000	C	3	1	1	9.400	12.497	1994	13	7.5	7.2621
57060000	C	3	1	1	17.716	20.940	1981	5	8.4	8.5046
57060000	C	3	1	1	17.716	20.940	1982	6	8.6	8.4750
57060000	C	3	1	1	17.716	20.940	1983	7	8.4	8.3862
57060000	C	3	1	1	17.716	20.940	1986	10	8.0	8.1602
57060000	C	3	1	1	17.716	20.940	1987	11	8.0	7.8750
57060000	C	3	1	1	17.716	20.940	1988	12	8.0	7.4916
57060000	C	3	1	1	17.716	20.940	1989	13	7.0	7.0022
57060000	C	3	1	1	17.716	20.940	1990	14	7.0	6.3990
57060000	C	3	1	1	17.716	20.940	1991	15	5.5	5.6742
57060000	C	3	1	1	17.716	20.940	1992	16	3.5	4.8200
57060000	C	3	1	1	17.716	20.940	1993	17	3.5	3.8286
57060000	C	3	1	1	17.716	20.940	1994	18	3.5	2.6922
57110000	L	3	1	1	0.000	0.564	1987	1	7.8	8.5085
57110000	L	3	1	1	0.000	0.564	1988	2	8.2	8.2335
57110000	L	3	1	1	0.000	0.564	1989	3	8.2	8.1263
57110000	L	3	1	1	0.000	0.564	1990	4	8.1	8.0453
57110000	L	3	1	1	0.000	0.564	1991	5	8.4	7.8489
57110000	L	3	1	1	0.000	0.564	1992	6	7.0	7.3955
57110000	L	3	1	1	0.000	0.564	1993	7	7.0	6.5435
57110000	L	3	1	1	0.000	0.564	1994	8	5.0	5.1513
58040000	C	3	1	1	0.000	2.817	1976	1	8.0	7.7675
58040000	C	3	1	1	0.000	2.817	1977	2	7.8	7.5678
58040000	C	3	1	1	0.000	2.817	1978	3	6.9	7.5456
58040000	C	3	1	1	0.000	2.817	1979	4	7.5	7.5383
58040000	C	3	1	1	0.000	2.817	1981	6	7.9	7.5010
58040000	C	3	1	1	0.000	2.817	1982	7	7.0	7.4671
58040000	C	3	1	1	0.000	2.817	1983	8	7.0	7.4396
58040000	C	3	1	1	0.000	2.817	1986	11	7.0	7.1295
58040000	C	3	1	1	0.000	2.817	1987	12	7.0	6.7588
58040000	C	3	1	1	0.000	2.817	1988	13	6.9	6.2291
58040000	C	3	1	1	0.000	2.817	1989	14	7.0	5.5146
58040000	C	3	1	1	0.000	2.817	1990	15	7.0	4.5895
58040000	C	3	1	1	0.000	2.817	1991	16	0.0	3.4280
58040000	C	3	1	1	0.000	2.817	1992	17	0.0	2.0043
58040000	C	3	1	1	0.000	2.817	1993	18	0.0	0.2926
58040000	C	3	1	1	0.000	2.817	1994	19	0.0	0.0000
58060000	C	3	1	1	21.937	25.963	1976	1	8.3	8.6794
58060000	C	3	1	1	21.937	25.963	1977	2	8.1	8.5510
58060000	C	3	1	1	21.937	25.963	1978	3	7.4	8.4620
58060000	C	3	1	1	21.937	25.963	1979	4	8.0	8.4040
58060000	C	3	1	1	21.937	25.963	1981	6	8.4	8.3474
58060000	C	3	1	1	21.937	25.963	1982	7	8.4	8.3320
58060000	C	3	1	1	21.937	25.963	1983	8	8.4	8.3140
58060000	C	3	1	1	21.937	25.963	1986	11	8.1	8.1604
58060000	C	3	1	1	21.937	25.963	1987	12	8.5	8.0480
58060000	C	3	1	1	21.937	25.963	1988	13	7.7	7.8910
58060000	C	3	1	1	21.937	25.963	1989	14	7.5	7.6810
58060000	C	3	1	1	21.937	25.963	1990	15	7.5	7.4096
59040000	C	3	1	1	0.000	2.580	1986	1	8.0	8.0971

Table B -- Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
59040000	C	3	1	1	0.000	2.580	1987	2	8.0	8.0895
59040000	C	3	1	1	0.000	2.580	1988	3	8.0	7.9879
59040000	C	3	1	1	0.000	2.580	1989	4	8.0	7.9651
59040000	C	3	1	1	0.000	2.580	1990	5	8.0	7.7239
59040000	C	3	1	1	0.000	2.580	1991	6	8.0	7.3659
59040000	C	3	1	1	0.000	2.580	1992	7	6.0	6.8911
59040000	C	3	1	1	0.000	2.580	1993	8	6.0	6.2995
59040000	C	3	1	1	0.000	2.580	1994	9	6.0	5.5911
59110000	C	3	1	1	14.695	20.790	1981	1	8.0	8.9887
59110000	C	3	1	1	14.695	20.790	1982	2	8.0	8.7790
59110000	C	3	1	1	14.695	20.790	1983	3	8.0	8.7145
59110000	C	3	1	1	14.695	20.790	1986	6	8.6	8.6962
59110000	C	3	1	1	14.695	20.790	1987	7	8.7	8.6884
59110000	C	3	1	1	14.695	20.790	1988	8	8.7	8.6749
59110000	C	3	1	1	14.695	20.790	1989	9	8.7	8.5879
59110000	C	3	1	1	14.695	20.790	1990	10	8.6	8.3830
59110000	C	3	1	1	14.695	20.790	1991	11	8.0	8.0437
59110000	C	3	1	1	14.695	20.790	1992	12	7.0	7.5400
59110000	C	3	1	1	14.695	20.790	1993	13	7.0	6.8419
60030000	C	3	1	9	9.156	12.700	1976	1	.	8.1699
60030000	C	3	1	1	9.156	12.700	1977	2	8.4	8.1042
60030000	C	3	1	1	9.156	12.700	1978	3	7.3	8.0361
60030000	C	3	1	1	9.156	12.700	1979	4	8.1	7.9614
60030000	C	3	1	1	9.156	12.700	1981	6	8.0	7.7754
60030000	C	3	1	1	9.156	12.700	1982	7	8.0	7.6557
60030000	C	3	1	1	9.156	12.700	1983	8	7.9	7.5126
60030000	C	3	1	1	9.156	12.700	1986	11	6.0	6.9009
60030000	C	3	1	1	9.156	12.700	1987	12	6.0	6.6222
60030000	C	3	1	1	9.156	12.700	1988	13	6.0	6.2991
60030000	C	3	1	1	9.156	12.700	1989	14	6.0	5.9274
60030000	C	3	1	1	9.156	12.700	1990	15	6.0	5.5029
60030000	C	3	1	1	9.156	12.700	1991	16	5.5	5.0214
60030000	C	3	1	8	9.156	12.700	1992	17	.	4.4787
60030000	C	3	1	1	9.156	12.700	1993	18	3.0	3.8706
60030000	C	3	1	1	9.156	12.700	1994	19	3.0	3.1929
60080000	C	3	1	1	1.440	2.179	1977	1	8.0	9.0125
60080000	C	3	1	1	1.440	2.179	1978	2	7.1	8.8512
60080000	C	3	1	1	1.440	2.179	1979	3	7.5	8.7265
60080000	C	3	1	1	1.440	2.179	1981	5	8.6	8.5317
60080000	C	3	1	1	1.440	2.179	1982	6	8.3	8.4340
60080000	C	3	1	1	1.440	2.179	1983	7	7.8	8.3177
60080000	C	3	1	1	1.440	2.179	1986	10	7.5	7.7192
60080000	C	3	1	1	1.440	2.179	1987	11	7.5	7.3905
60080000	C	3	1	1	1.440	2.179	1988	12	7.5	6.9742
60080000	C	3	1	1	1.440	2.179	1989	13	7.5	6.4565
60080000	C	3	1	1	1.440	2.179	1990	14	7.5	5.8236
60080000	C	3	1	1	1.440	2.179	1991	15	3.0	5.0617
60080000	C	3	1	1	1.440	2.179	1992	16	3.0	4.1570
60080000	C	3	1	1	1.440	2.179	1993	17	3.0	3.0957
60080000	C	3	1	1	1.440	2.179	1994	18	3.0	1.8640
61080000	C	3	1	7	15.790	17.618	1983	1	8.8	8.7791
61080000	C	3	1	1	15.790	17.618	1986	4	8.3	8.2706
61080000	C	3	1	1	15.790	17.618	1987	5	8.0	8.1615
61080000	C	3	1	1	15.790	17.618	1988	6	8.0	8.0596
61080000	C	3	1	1	15.790	17.618	1989	7	8.0	7.9511

Table B -- Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
61080000	C	3	1	1	15.790	17.618	1990	8	8.0	7.8222
61080000	C	3	1	1	15.790	17.618	1991	9	8.0	7.6591
61080000	C	3	1	1	15.790	17.618	1992	10	7.0	7.4480
61080000	C	3	1	1	15.790	17.618	1993	11	7.0	7.1751
61080000	C	3	1	1	15.790	17.618	1994	12	7.0	6.8266
70020000	R	5	1	7	28.485	29.213	1987	1	9.1	9.1208
70020000	R	5	1	1	28.485	29.213	1988	2	9.0	9.0750
70020000	R	5	1	1	28.485	29.213	1989	3	9.0	9.0212
70020000	R	5	1	1	28.485	29.213	1990	4	9.0	8.8886
70020000	R	5	1	1	28.485	29.213	1991	5	8.5	8.5664
70020000	R	5	1	1	28.485	29.213	1992	6	8.5	8.1132
70020000	R	5	1	1	28.485	29.213	1993	7	7.0	7.5338
70020000	R	5	1	1	28.485	29.213	1994	8	7.0	6.8330
70030000	L	5	1	1	8.828	11.780	1978	1	10.0	9.1957
70030000	L	5	1	1	8.828	11.780	1979	2	7.6	8.7541
70030000	L	5	1	1	8.828	11.780	1981	4	7.5	8.1169
70030000	L	5	1	1	8.828	11.780	1982	5	8.7	7.8949
70030000	L	5	1	1	8.828	11.780	1983	6	8.3	7.7197
70030000	L	5	1	1	8.828	11.780	1986	9	7.0	7.3429
70030000	L	5	1	1	8.828	11.780	1987	10	7.0	7.2229
70030000	L	5	1	1	8.828	11.780	1988	11	7.0	7.0837
70030000	L	5	1	1	8.828	11.780	1989	12	7.0	6.9121
70030000	L	5	1	1	8.828	11.780	1990	13	7.0	6.6949
70030000	L	5	1	3	8.828	11.780	1991	14	5.5	6.4189
70030000	L	5	1	3	8.828	11.780	1992	15	6.0	6.0709
70030000	L	5	1	1	8.828	11.780	1993	16	6.5	5.6377
70030000	L	5	1	1	8.828	11.780	1994	17	4.5	5.1061
70050000	L	5	1	1	14.004	14.489	1982	1	8.0	8.0500
70050000	L	5	1	1	14.004	14.489	1983	2	8.0	8.0203
70050000	L	5	1	1	14.004	14.489	1986	5	8.0	8.0147
70050000	L	5	1	1	14.004	14.489	1987	6	8.0	7.9752
70050000	L	5	1	1	14.004	14.489	1988	7	8.0	7.9518
70050000	L	5	1	1	14.004	14.489	1989	8	8.0	7.8583
70050000	L	5	1	1	14.004	14.489	1990	9	7.8	7.7312
70050000	L	5	1	1	14.004	14.489	1991	10	7.4	7.5675
70050000	L	5	1	1	14.004	14.489	1992	11	7.5	7.3642
70050000	L	5	1	1	14.004	14.489	1993	12	7.0	7.1183
70050000	L	5	1	1	14.004	14.489	1994	13	7.0	6.8268
70050000	R	5	1	1	14.004	14.489	1982	1	8.8	8.7539
70050000	R	5	1	1	14.004	14.489	1983	2	8.4	8.4512
70050000	R	5	1	1	14.004	14.489	1986	5	8.0	7.9679
70050000	R	5	1	1	14.004	14.489	1987	6	7.7	7.9064
70050000	R	5	1	1	14.004	14.489	1988	7	8.0	7.8737
70050000	R	5	1	1	14.004	14.489	1989	8	8.0	7.8572
70050000	R	5	1	1	14.004	14.489	1990	9	8.0	7.8443
70050000	R	5	1	1	14.004	14.489	1991	10	7.7	7.8224
70050000	R	5	1	1	14.004	14.489	1992	11	7.7	7.7789
70050000	R	5	1	1	14.004	14.489	1993	12	7.7	7.7012
70050000	R	5	1	1	14.004	14.489	1994	13	7.7	7.5767
70225000	L	5	4	1	1.248	3.926	1986	1	8.7	8.8384
70225000	L	5	4	1	1.248	3.926	1987	2	9.0	8.7081
70225000	L	5	4	1	1.248	3.926	1988	3	8.5	8.6138
70225000	L	5	4	1	1.248	3.926	1989	4	8.5	8.5261
70225000	L	5	4	1	1.248	3.926	1990	5	8.5	8.4156

Table B – Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
70225000	L	5	4	1	1.248	3.926	1991	6	8.0	8.2529
70225000	L	5	4	1	1.248	3.926	1992	7	8.0	8.0086
70225000	L	5	4	1	1.248	3.926	1993	8	8.0	7.6533
70225000	L	5	4	1	1.248	3.926	1994	9	7.0	7.1576
71020000	C	2	1	1	0.000	1.188	1981	1	8.9	8.9601
71020000	C	2	1	1	0.000	1.188	1982	2	8.8	8.6973
71020000	C	2	1	1	0.000	1.188	1983	3	8.5	8.5031
71020000	C	2	1	1	0.000	1.188	1986	6	8.1	8.1881
71020000	C	2	1	1	0.000	1.188	1987	7	8.1	8.1243
71020000	C	2	1	1	0.000	1.188	1988	8	8.2	8.0571
71020000	C	2	1	1	0.000	1.188	1989	9	8.0	7.9721
71020000	C	2	1	1	0.000	1.188	1990	10	8.0	7.8549
71020000	C	2	1	1	0.000	1.188	1991	11	7.5	7.6911
71020000	C	2	1	1	0.000	1.188	1992	12	7.9	7.4663
71020000	C	2	1	1	0.000	1.188	1993	13	7.0	7.1661
71020000	C	2	1	1	0.000	1.188	1994	14	7.0	6.7761
72001000	L	2	4	1	9.960	10.600	1976	1	8.0	8.4201
72001000	L	2	4	1	9.960	10.600	1977	2	8.5	8.1642
72001000	L	2	4	1	9.960	10.600	1978	3	8.5	7.9983
72001000	L	2	4	1	9.960	10.600	1979	4	8.0	7.8960
72001000	L	2	4	1	9.960	10.600	1981	6	7.0	7.7766
72001000	L	2	4	1	9.960	10.600	1982	7	8.7	7.7067
72001000	L	2	4	1	9.960	10.600	1983	8	8.6	7.5948
72001000	L	2	4	1	9.960	10.600	1986	11	7.0	6.7431
72040000	L	2	1	7	7.536	9.572	1989	1	8.0	7.9801
72040000	L	2	1	1	7.536	9.572	1990	2	7.0	7.2065
72040000	L	2	1	1	7.536	9.572	1991	3	7.0	6.3739
72040000	L	2	1	1	7.536	9.572	1992	4	4.5	5.3437
72040000	L	2	1	1	7.536	9.572	1993	5	4.5	3.9773
72040000	L	2	1	1	7.536	9.572	1994	6	2.0	2.1361
72150000	C	2	1	7	8.161	11.183	1982	1	9.1	8.9795
72150000	C	2	1	1	8.161	11.183	1983	2	8.6	8.8317
72150000	C	2	1	1	8.161	11.183	1986	5	8.7	8.4963
72150000	C	2	1	1	8.161	11.183	1987	6	8.6	8.3965
72150000	C	2	1	1	8.161	11.183	1988	7	8.0	8.2907
72150000	C	2	1	1	8.161	11.183	1989	8	8.0	8.1717
72150000	C	2	1	1	8.161	11.183	1990	9	8.0	8.0323
72150000	C	2	1	1	8.161	11.183	1991	10	8.0	7.8653
72150000	C	2	1	1	8.161	11.183	1992	11	7.7	7.6635
72150000	C	2	1	1	8.161	11.183	1993	12	8.4	7.4197
72150000	C	2	1	1	8.161	11.183	1994	13	8.0	7.1267
72190000	C	2	1	1	0.213	1.141	1977	1	7.8	7.9711
72190000	C	2	1	1	0.213	1.141	1978	2	8.2	7.9656
72190000	C	2	1	1	0.213	1.141	1979	3	7.9	7.9470
72190000	C	2	1	1	0.213	1.141	1981	5	8.0	7.8100
72190000	C	2	1	1	0.213	1.141	1982	6	7.5	7.6971
72190000	C	2	1	1	0.213	1.141	1983	7	7.5	7.5546
72190000	C	2	1	1	0.213	1.141	1986	10	7.0	6.9495
72220000	L	2	1	1	6.395	7.595	1981	1	8.7	8.5954
72220000	L	2	1	1	6.395	7.595	1982	2	8.5	8.5886
72220000	L	2	1	1	6.395	7.595	1983	3	8.6	8.5698
72220000	L	2	1	1	6.395	7.595	1986	6	8.3	8.4414
72220000	L	2	1	1	6.395	7.595	1987	7	8.3	8.3746

Table B -- Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
72220000	L	2	1	1	6.395	7.595	1988	8	8.2	8.2958
72220000	L	2	1	1	6.395	7.595	1989	9	8.5	8.2050
72220000	L	2	1	1	6.395	7.595	1990	10	8.1	8.1022
72220000	L	2	1	1	6.395	7.595	1991	11	7.9	7.9874
72220000	L	2	1	1	6.395	7.595	1992	12	8.1	7.8606
72220000	L	2	1	1	6.395	7.595	1993	13	7.6	7.7218
72220000	L	2	1	1	6.395	7.595	1994	14	7.5	7.5710
72220000	R	2	1	1	6.433	7.595	1981	1	8.7	8.7227
72220000	R	2	1	1	6.433	7.595	1982	2	8.6	8.4335
72220000	R	2	1	1	6.433	7.595	1983	3	8.0	8.2119
72220000	R	2	1	1	6.433	7.595	1986	6	7.9	7.8447
72220000	R	2	1	1	6.433	7.595	1987	7	7.8	7.7855
72220000	R	2	1	1	6.433	7.595	1988	8	8.0	7.7399
72220000	R	2	1	1	6.433	7.595	1989	9	8.0	7.6971
72220000	R	2	1	1	6.433	7.595	1990	10	8.0	7.6463
72220000	R	2	1	1	6.433	7.595	1991	11	8.0	7.5767
72220000	R	2	1	1	6.433	7.595	1992	12	7.4	7.4775
72220000	R	2	1	1	6.433	7.595	1993	13	7.2	7.3379
72220000	R	2	1	1	6.433	7.595	1994	14	7.1	7.1471
72270000	L	2	4	1	12.212	15.377	1986	1	8.9	8.8835
72270000	L	2	4	1	12.212	15.377	1987	2	7.6	8.5280
72270000	L	2	4	1	12.212	15.377	1988	3	7.2	8.2577
72270000	L	2	4	1	12.212	15.377	1989	4	7.9	8.0552
72270000	L	2	4	1	12.212	15.377	1990	5	8.0	7.9031
72270000	L	2	4	1	12.212	15.377	1991	6	8.0	7.7840
72270000	L	2	4	1	12.212	15.377	1992	7	7.5	7.6805
72270000	L	2	4	1	12.212	15.377	1993	8	7.5	7.5752
72270000	L	2	4	1	12.212	15.377	1994	9	7.5	7.4507
73001000	R	5	4	1	6.847	11.046	1976	1	9.0	8.9296
73001000	R	5	4	1	6.847	11.046	1977	2	8.9	8.5348
73001000	R	5	4	1	6.847	11.046	1978	3	8.0	8.2008
73001000	R	5	4	1	6.847	11.046	1979	4	7.0	7.9222
73001000	R	5	4	1	6.847	11.046	1981	6	8.0	7.5096
73001000	R	5	4	1	6.847	11.046	1982	7	8.0	7.3648
73001000	R	5	4	1	6.847	11.046	1983	8	7.0	7.2538
73001000	R	5	4	1	6.847	11.046	1986	11	7.0	7.0696
73001000	R	5	4	1	6.847	11.046	1987	12	7.0	7.0398
73001000	R	5	4	1	6.847	11.046	1988	13	7.0	7.0168
73001000	R	5	4	1	6.847	11.046	1989	14	7.0	6.9952
73001000	R	5	4	1	6.847	11.046	1990	15	7.0	6.9696
73001000	R	5	4	1	6.847	11.046	1991	16	7.0	6.9346
73001000	R	5	4	1	6.847	11.046	1992	17	7.0	6.8848
73001000	L	5	4	1	6.847	11.046	1981	1	8.6	8.9201
73001000	L	5	4	1	6.847	11.046	1982	2	8.8	8.3281
73001000	L	5	4	1	6.847	11.046	1983	3	8.0	8.0741
73001000	L	5	4	1	6.847	11.046	1986	6	8.0	8.0591
73001000	L	5	4	1	6.847	11.046	1987	7	8.0	8.0101
73001000	L	5	4	1	6.847	11.046	1988	8	7.6	8.0041
73001000	L	5	4	1	6.847	11.046	1989	9	8.0	7.8865
73001000	L	5	4	1	6.847	11.046	1990	10	8.0	7.4837
73001000	L	5	4	1	6.847	11.046	1991	11	7.0	6.7781
73001000	L	5	4	1	6.847	11.046	1992	12	5.5	5.6971
73050000	C	5	1	1	0.000	0.464	1977	1	10.0	9.9504
73050000	C	5	1	1	0.000	0.464	1979	3	9.0794	

Table B -- Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
73050000	C	5	1	1	0.000	0.464	1981	5	8.2	8.6500
73050000	C	5	1	1	0.000	0.464	1982	6	8.8	8.6194
73050000	C	5	1	1	0.000	0.464	1983	7	8.8	8.6150
73050000	C	5	1	1	0.000	0.464	1986	10	8.3	8.5950
73050000	C	5	1	1	0.000	0.464	1987	11	9.0	8.5644
73050000	C	5	1	1	0.000	0.464	1988	12	8.2	8.5574
73050000	C	5	1	1	0.000	0.464	1989	13	8.5	8.5230
73050000	C	5	1	1	0.000	0.464	1990	14	8.5	8.4502
74070000	C	2	1	7	0.039	4.715	1982	1	8.9	8.7255
74070000	C	2	1	1	0.039	4.715	1983	2	8.5	8.7253
74070000	C	2	1	1	0.039	4.715	1986	5	8.5	8.6505
74070000	C	2	1	1	0.039	4.715	1987	6	8.5	8.5963
74070000	C	2	1	1	0.039	4.715	1988	7	9.0	8.5255
74070000	C	2	1	1	0.039	4.715	1989	8	8.7	8.4369
74070000	C	2	1	1	0.039	4.715	1990	9	8.0	8.3293
74070000	C	2	1	1	0.039	4.715	1991	10	8.0	8.2015
74070000	C	2	1	1	0.039	4.715	1992	11	8.0	8.0523
74070000	C	2	1	1	0.039	4.715	1993	12	8.0	7.8805
74070000	C	2	1	1	0.039	4.715	1994	13	7.7	7.6849
75060000	R	5	1	1	3.822	5.162	1976	1	8.1	8.1050
75060000	R	5	1	1	3.822	5.162	1977	2	6.9	7.9844
75060000	R	5	1	1	3.822	5.162	1978	3	6.3	7.9252
75060000	R	5	1	1	3.822	5.162	1979	4	7.1	7.9028
75060000	R	5	1	1	3.822	5.162	1981	6	5.3	7.8700
75060000	R	5	1	1	3.822	5.162	1982	7	8.0	7.8104
75060000	R	5	1	1	3.822	5.162	1983	8	7.6	7.6892
75060000	R	5	1	1	3.822	5.162	1986	11	7.9	6.7100
75060000	R	5	1	1	3.822	5.162	1987	12	7.9	6.0964
75080000	C	5	1	7	11.715	12.828	1986	1	8.1	8.0846
75080000	C	5	1	1	11.715	12.828	1987	2	7.9	7.9972
75080000	C	5	1	1	11.715	12.828	1988	3	7.8	7.8872
75080000	C	5	1	1	11.715	12.828	1989	4	8.1	7.7540
75080000	C	5	1	1	11.715	12.828	1990	5	7.8	7.5970
75080000	C	5	1	1	11.715	12.828	1991	6	7.0	7.4156
75080000	C	5	1	1	11.715	12.828	1992	7	7.0	7.2092
75080000	C	5	1	1	11.715	12.828	1993	8	7.0	6.9772
75080000	C	5	1	1	11.715	12.828	1994	9	7.0	6.7190
75280000	R	5	4	7	23.378	24.050	1990	1	9.0	8.9900
75280000	R	5	4	1	23.378	24.050	1991	2	8.8	8.8402
75280000	R	5	4	1	23.378	24.050	1992	3	8.8	8.7408
75280000	R	5	4	1	23.378	24.050	1993	4	8.8	8.6420
75280000	R	5	4	1	23.378	24.050	1994	5	8.5	8.4940
76010000	C	2	1	1	0.000	3.953	1986	1	8.5	8.8241
76010000	C	2	1	1	0.000	3.953	1987	2	8.7	8.7290
76010000	C	2	1	1	0.000	3.953	1988	3	8.9	8.7150
76010000	C	2	1	1	0.000	3.953	1989	4	8.5	8.4297
76010000	C	2	1	1	0.000	3.953	1990	5	8.4	8.4017
76010000	C	2	1	1	0.000	3.953	1991	6	8.0	7.8842
76010000	C	2	1	1	0.000	3.953	1992	7	6.5	7.1625
76010000	C	2	1	1	0.000	3.953	1993	8	7.5	6.2366
76010000	C	2	1	1	0.000	3.953	1994	9	4.5	5.1065
76010000	C	2	1	1	12.451	14.699	1977	1	10.0	9.9980
76010000	C	2	1	1	12.451	14.699	1978	2	8.0	9.5056

Table B – Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
76010000	C	2	1	1	12.451	14.699	1979	3	8.2	9.1336
76010000	C	2	1	1	12.451	14.699	1981	5	8.7	8.6740
76010000	C	2	1	1	12.451	14.699	1982	6	8.0	8.5480
76010000	C	2	1	1	12.451	14.699	1983	7	8.0	8.4656
76010000	C	2	1	2	12.451	14.699	1986	10	8.5	8.2880
76010000	C	2	1	2	12.451	14.699	1987	11	8.5	8.1880
76010000	C	2	1	2	12.451	14.699	1988	12	8.5	8.0356
76010000	C	2	1	2	12.451	14.699	1989	13	8.5	7.8116
76010000	C	2	1	1	12.451	14.699	1990	14	8.5	7.4968
76010000	L	2	1	7	26.774	27.578	1983	1	8.0	8.1521
76010000	L	2	1	1	26.774	27.578	1986	4	7.9	7.5061
76010000	L	2	1	1	26.774	27.578	1987	5	8.0	7.4957
76010000	L	2	1	1	26.774	27.578	1988	6	7.0	7.4855
76010000	L	2	1	1	26.774	27.578	1989	7	7.0	7.4849
76010000	L	2	1	1	26.774	27.578	1990	8	7.0	7.4003
76010000	L	2	1	1	26.774	27.578	1991	9	7.0	7.1665
76010000	L	2	1	1	26.774	27.578	1992	10	7.5	6.7409
76010000	L	2	1	1	26.774	27.578	1993	11	6.5	6.0701
76010000	L	2	1	1	26.774	27.578	1994	12	4.5	5.1007
76020000	C	2	1	1	8.450	10.814	1983	1	8.0	8.8664
76020000	C	2	1	1	8.450	10.814	1986	3	8.6	8.8505
76020000	C	2	1	1	8.450	10.814	1987	4	9.0	8.7661
76020000	C	2	1	1	8.450	10.814	1988	5	8.6	8.5664
76020000	C	2	1	1	8.450	10.814	1989	6	8.7	8.2841
76020000	C	2	1	1	8.450	10.814	1990	7	8.7	7.9376
76020000	C	2	1	1	8.450	10.814	1991	8	8.2	7.9360
76020000	C	2	1	1	8.450	10.814	1992	9	7.0	7.5389
76020000	C	2	1	1	8.450	10.814	1993	10	7.0	7.1096
76020000	C	2	1	1	8.450	10.814	1994	11	7.0	6.6649
76030000	L	2	1	1	0.209	0.856	1981	1	7.4	7.6021
76030000	L	2	1	1	0.209	0.856	1982	2	7.8	7.5969
76030000	L	2	1	1	0.209	0.856	1983	3	7.7	7.5649
76030000	L	2	1	1	0.209	0.856	1986	6	7.1	7.3749
76030000	L	2	1	1	0.209	0.856	1987	7	7.2	7.2481
76030000	L	2	1	1	0.209	0.856	1988	8	7.4	7.1029
76030000	L	2	1	1	0.209	0.856	1989	9	6.9	6.9441
76030000	L	2	1	1	0.209	0.856	1990	10	6.7	6.7765
76030000	L	2	1	1	0.209	0.856	1991	11	6.8	6.6049
76030000	L	2	1	1	0.209	0.856	1992	12	6.4	6.4341
76030000	L	2	1	1	0.209	0.856	1993	13	6.3	6.2689
76030000	L	2	1	1	0.209	0.856	1994	14	6.2	6.1141
76030000	R	2	1	1	0.209	0.856	1981	1	7.8	7.9155
76030000	R	2	1	1	0.209	0.856	1982	2	7.7	7.6397
76030000	R	2	1	1	0.209	0.856	1983	3	7.6	7.4287
76030000	R	2	1	1	0.209	0.856	1986	6	7.0	7.0885
76030000	R	2	1	1	0.209	0.856	1987	7	7.0	7.0407
76030000	R	2	1	1	0.209	0.856	1988	8	7.0	7.0097
76030000	R	2	1	1	0.209	0.856	1989	9	7.0	6.9859
76030000	R	2	1	1	0.209	0.856	1990	10	7.0	6.9597
76030000	R	2	1	1	0.209	0.856	1991	11	7.0	6.9215
76030000	R	2	1	1	0.209	0.856	1992	12	7.1	6.8617
76030000	R	2	1	1	0.209	0.856	1993	13	6.8	6.7707
76030000	R	2	1	1	0.209	0.856	1994	14	6.7	6.6389
76040000	C	2	1	7	0.000	6.185	1983	1	8.7	8.7206

Table B – Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
76040000	C	2	1	1	0.000	6.185	1986	4	8.5	8.3257
76040000	C	2	1	1	0.000	6.185	1987	5	8.0	8.1738
76040000	C	2	1	1	0.000	6.185	1988	6	8.0	8.0067
76040000	C	2	1	1	0.000	6.185	1989	7	7.0	7.8215
76040000	C	2	1	1	0.000	6.185	1990	8	7.0	7.6151
76040000	C	2	1	1	0.000	6.185	1991	9	7.5	7.3846
76040000	C	2	1	1	0.000	6.185	1992	10	7.0	7.1270
76040000	C	2	1	1	0.000	6.185	1993	11	7.0	6.8392
76040000	C	2	1	1	0.000	6.185	1994	12	6.5	6.5183
76050000	C	2	1	1	0.000	1.352	1982	1	8.5	8.9790
76050000	C	2	1	1	0.000	1.352	1983	2	8.4	8.8420
76050000	C	2	1	1	0.000	1.352	1986	5	8.5	8.6542
76050000	C	2	1	1	0.000	1.352	1987	6	8.7	8.6260
76050000	C	2	1	1	0.000	1.352	1988	7	8.1	8.5950
76050000	C	2	1	1	0.000	1.352	1989	8	8.6	8.5492
76050000	C	2	1	1	0.000	1.352	1990	9	8.4	8.4766
76050000	C	2	1	1	0.000	1.352	1991	10	8.7	8.3652
76050000	C	2	1	1	0.000	1.352	1992	11	7.7	8.2030
76050000	C	2	1	1	0.000	1.352	1993	12	8.6	7.9780
76050000	C	2	1	1	0.000	1.352	1994	13	7.7	7.6782
76050000	C	2	1	1	8.200	10.744	1986	1	8.4	9.1571
76050000	C	2	1	1	8.200	10.744	1987	2	8.0	8.5642
76050000	C	2	1	1	8.200	10.744	1988	3	7.8	8.2713
76050000	C	2	1	1	8.200	10.744	1989	4	8.0	8.1284
76050000	C	2	1	1	8.200	10.744	1990	5	8.0	7.9855
76050000	C	2	1	1	8.200	10.744	1991	6	7.9	7.6926
76050000	C	2	1	1	8.200	10.744	1992	7	7.4	7.0997
76060000	C	2	1	7	0.000	1.395	1983	1	8.6	9.0270
76060000	C	2	1	1	0.000	1.395	1986	4	8.5	8.2110
76060000	C	2	1	1	0.000	1.395	1987	5	7.5	7.8562
76060000	C	2	1	1	0.000	1.395	1988	6	7.5	7.4800
76060000	C	2	1	1	0.000	1.395	1989	7	7.0	7.0944
76060000	C	2	1	1	0.000	1.395	1990	8	7.0	6.7114
76110000	R	2	1	7	19.538	20.481	1986	1	8.2	8.1519
76110000	R	2	1	1	19.538	20.481	1987	2	8.0	8.0701
76110000	R	2	1	1	19.538	20.481	1988	3	8.0	8.0251
76110000	R	2	1	1	19.538	20.481	1989	4	8.0	7.9971
76110000	R	2	1	1	19.538	20.481	1990	5	8.0	7.9663
76110000	R	2	1	1	19.538	20.481	1991	6	8.0	7.9129
76110000	R	2	1	1	19.538	20.481	1992	7	7.0	7.8171
76110000	R	2	1	1	19.538	20.481	1993	8	7.5	7.6591
76110000	R	2	1	1	19.538	20.481	1994	9	7.5	7.4191
77010000	L	5	1	1	2.645	3.251	1976	1	8.7	8.6777
77010000	L	5	1	1	2.645	3.251	1977	2	8.3	8.3188
77010000	L	5	1	1	2.645	3.251	1978	3	8.2	8.0583
77010000	L	5	1	1	2.645	3.251	1979	4	7.8	7.8818
77010000	L	5	1	1	2.645	3.251	1981	6	7.1	7.7887
77010000	L	5	1	1	2.645	3.251	1982	7	8.1	7.7658
77010000	L	5	1	1	2.645	3.251	1983	8	8.0	7.7278
77010000	L	5	1	1	2.645	3.251	1986	11	8.0	7.7232
77010000	L	5	1	1	2.645	3.251	1987	12	7.5	7.7123
77010000	L	5	1	1	2.645	3.251	1988	13	7.5	7.6973
77010000	L	5	1	1	2.645	3.251	1989	14	7.5	7.5688
77010000	L	5	1	1	2.645	3.251	1990	15	7.5	7.3659

Table B -- Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
77010000	R	5	1	1	4.529	5.155	1976	1	8.7	8.5334
77010000	R	5	1	1	4.529	5.155	1977	2	8.2	8.3943
77010000	R	5	1	1	4.529	5.155	1978	3	8.5	8.2640
77010000	R	5	1	1	4.529	5.155	1979	4	8.0	8.1377
77010000	R	5	1	1	4.529	5.155	1981	6	6.9	7.8779
77010000	R	5	1	1	4.529	5.155	1982	7	8.0	7.7348
77010000	R	5	1	1	4.529	5.155	1983	8	8.5	7.5765
77010000	R	5	1	1	4.529	5.155	1986	11	7.5	6.9624
77010000	R	5	1	1	4.529	5.155	1987	12	6.0	6.6953
77010000	R	5	1	1	4.529	5.155	1988	13	6.0	6.3890
77010000	R	5	1	1	4.529	5.155	1989	14	6.0	6.0387
77010000	R	5	1	1	4.529	5.155	1990	15	6.0	5.6396
77010000	C	5	1	1	14.382	15.298	1978	1	8.7	8.8407
77010000	C	5	1	1	14.382	15.298	1979	2	8.5	8.8282
77010000	C	5	1	1	14.382	15.298	1981	4	7.3	8.8195
77010000	C	5	1	1	14.382	15.298	1982	5	9.0	8.8086
77010000	C	5	1	1	14.382	15.298	1983	6	8.7	8.7851
77010000	C	5	1	1	14.382	15.298	1986	9	8.5	8.3582
77010000	C	5	1	1	14.382	15.298	1987	10	8.4	8.0787
77010000	C	5	1	1	14.382	15.298	1988	11	8.5	7.7116
77010000	C	5	1	1	14.382	15.298	1989	12	7.0	7.2455
77010000	C	5	1	1	14.382	15.298	1990	13	7.0	6.6690
77080000	R	5	1	7	5.922	6.380	1986	1	7.4	8.4807
77080000	R	5	1	1	5.922	6.380	1987	2	7.1	8.0870
77080000	R	5	1	1	5.922	6.380	1988	3	7.2	7.8719
77080000	R	5	1	1	5.922	6.380	1989	4	7.6	7.7754
77080000	R	5	1	1	5.922	6.380	1990	5	7.9	7.7375
77080000	R	5	1	1	5.922	6.380	1991	6	8.0	7.6982
77080000	R	5	1	1	5.922	6.380	1992	7	7.8	7.5975
77080000	R	5	1	1	5.922	6.380	1993	8	7.0	7.3754
77080000	R	5	1	1	5.922	6.380	1994	9	7.1	6.9719
77160000	L	5	4	1	2.172	3.227	1982	1	9.0	8.8997
77160000	L	5	4	1	2.172	3.227	1983	2	8.0	8.6405
77160000	L	5	4	1	2.172	3.227	1986	5	8.0	8.2145
77160000	L	5	4	1	2.172	3.227	1987	6	8.0	8.1337
77160000	L	5	4	1	2.172	3.227	1988	7	7.1	8.0555
77160000	L	5	4	1	2.172	3.227	1989	8	6.7	7.9631
77160000	L	5	4	7	2.172	3.227	1990	9	8.5	7.8397
77160000	L	5	4	1	2.172	3.227	1991	10	8.4	7.6685
77160000	L	5	4	1	2.172	3.227	1992	11	8.5	7.4327
78010000	L	2	1	1	13.971	14.625	1986	1	8.6	8.7253
78010000	L	2	1	1	13.971	14.625	1987	2	9.0	8.7086
78010000	L	2	1	1	13.971	14.625	1988	3	8.6	8.6682
78010000	L	2	1	1	13.971	14.625	1989	4	8.0	8.5197
78010000	L	2	1	1	13.971	14.625	1990	5	8.1	8.0602
78010000	L	2	1	1	13.971	14.625	1991	6	8.6	7.2317
78010000	L	2	1	1	13.971	14.625	1992	7	4.5	5.9358
78010000	L	2	1	1	13.971	14.625	1993	8	4.5	4.0741
78010000	L	2	1	1	13.971	14.625	1994	9	4.5	1.5482
78030000	C	2	1	1	1.490	3.893	1982	1	8.3	8.4860
78030000	C	2	1	1	1.490	3.893	1983	2	8.3	8.4793
78030000	C	2	1	1	1.490	3.893	1986	5	8.1	8.4615
78030000	C	2	1	1	1.490	3.893	1987	6	8.3	8.4318
78030000	C	2	1	1	1.490	3.893	1988	7	9.0	8.3339

Table B – Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
78030000	C	2	1	1	1.490	3.893	1989	8	8.8	8.2968
78030000	C	2	1	1	1.490	3.893	1990	9	8.1	8.2435
78030000	C	2	1	1	1.490	3.893	1991	10	8.2	8.1760
78030000	C	2	1	1	1.490	3.893	1992	11	7.4	7.9485
78030000	C	2	1	1	1.490	3.893	1993	12	7.8	7.6418
78030000	C	2	1	1	1.490	3.893	1994	13	7.3	7.2463
78040000	L	2	1	1	15.996	16.687	1981	1	7.1	7.6927
78040000	L	2	1	1	15.996	16.687	1983	3	8.0	7.6477
78040000	L	2	1	1	15.996	16.687	1986	6	7.7	7.6341
78040000	L	2	1	1	15.996	16.687	1987	7	7.5	7.6017
78040000	L	2	1	1	15.996	16.687	1988	8	7.5	7.5107
78040000	L	2	1	1	15.996	16.687	1989	9	7.0	7.3057
78040000	L	2	1	1	15.996	16.687	1990	10	7.0	7.0023
78040000	L	2	1	1	15.996	16.687	1991	11	6.8	6.4001
78050000	C	2	1	1	0.000	0.541	1976	1	7.9	7.9659
78050000	C	2	1	1	0.000	0.541	1977	2	8.2	7.9656
78050000	C	2	1	1	0.000	0.541	1978	3	7.9	7.9094
78050000	C	2	1	1	0.000	0.541	1979	4	7.7	7.8015
78050000	C	2	1	1	0.000	0.541	1981	6	6.6	7.4531
78050000	C	2	1	1	0.000	0.541	1982	7	8.0	7.2234
78050000	C	2	1	1	0.000	0.541	1983	8	7.0	6.9639
78050000	C	2	1	1	0.000	0.541	1986	11	7.0	6.0606
78050000	C	2	1	1	0.000	0.541	1987	12	5.0	5.7359
78050000	C	2	1	1	0.000	0.541	1988	13	5.0	5.4084
78050000	C	2	1	1	0.000	0.541	1989	14	5.0	5.0835
78050000	C	2	1	1	0.000	0.541	1990	15	5.0	4.7666
78050000	C	2	1	1	0.000	0.541	1991	16	5.0	4.4631
78050000	C	2	1	1	0.000	0.541	1992	17	4.0	4.1784
78050000	C	2	1	1	0.000	0.541	1993	18	6.0	3.9179
78050000	C	2	1	1	0.000	0.541	1994	19	5.0	3.6870
78050000	C	2	1	1	2.825	4.096	1976	1	8.4	8.4672
78050000	C	2	1	1	2.825	4.096	1977	2	8.5	8.1562
78050000	C	2	1	1	2.825	4.096	1978	3	8.0	7.8918
78050000	C	2	1	1	2.825	4.096	1979	4	7.0	7.6668
78050000	C	2	1	1	2.825	4.096	1981	6	6.9	7.3062
78050000	C	2	1	1	2.825	4.096	1982	7	8.0	7.1562
78050000	C	2	1	1	2.825	4.096	1983	8	7.0	7.0168
78050000	C	2	1	1	2.825	4.096	1986	11	7.0	6.5902
78050000	C	2	1	1	2.825	4.096	1987	12	6.0	6.4212
78050000	C	2	1	1	2.825	4.096	1988	13	6.0	6.2268
78050000	C	2	1	1	2.825	4.096	1989	14	6.0	5.9998
78050000	C	2	1	1	2.825	4.096	1990	15	6.0	5.7330
78070000	C	2	1	7	5.344	11.579	1990	1	8.7	8.7000
78070000	C	2	1	1	5.344	11.579	1991	2	8.4	8.4002
78070000	C	2	1	1	5.344	11.579	1992	3	8.3	8.3008
78070000	C	2	1	1	5.344	11.579	1993	4	8.5	8.2770
78070000	C	2	1	1	5.344	11.579	1994	5	8.2	8.2040
78090000	C	2	1	1	0.000	6.000	1978	1	8.2	8.8416
78090000	C	2	1	1	0.000	6.000	1979	2	8.4	8.8324
78090000	C	2	1	1	0.000	6.000	1981	4	8.1	8.8282
78090000	C	2	1	1	0.000	6.000	1982	5	8.8	8.8098
78090000	C	2	1	1	0.000	6.000	1983	6	8.7	8.7752
78090000	C	2	1	1	0.000	6.000	1986	9	8.7	8.5994
78090000	C	2	1	1	0.000	6.000	1987	10	8.7	8.5168

Table B – Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
78090000	C	2	1	1	0.000	6.000	1988	11	7.4	8.4222
78090000	C	2	1	1	0.000	6.000	1989	12	8.1	8.3156
78090000	C	2	1	1	0.000	6.000	1990	13	8.1	8.1970
78090000	C	2	1	1	0.000	6.000	1991	14	8.2	8.0664
78090000	C	2	1	1	0.000	6.000	1992	15	7.8	7.9238
78090000	C	2	1	1	0.000	6.000	1993	16	7.7	7.7692
78090000	C	2	1	1	0.000	6.000	1994	17	7.7	7.6026
79002000	R	5	4	1	3.065	9.800	1976	1	9.2	9.2409
79002000	R	5	4	1	3.065	9.800	1977	2	9.2	9.1064
79002000	R	5	4	1	3.065	9.800	1978	3	9.0	9.0403
79002000	R	5	4	1	3.065	9.800	1979	4	9.0	9.0244
79002000	R	5	4	1	3.065	9.800	1981	6	9.0	9.0198
79002000	R	5	4	1	3.065	9.800	1982	7	9.0	9.0039
79002000	R	5	4	1	3.065	9.800	1983	8	9.0	8.9378
79002000	R	5	4	1	3.065	9.800	1986	11	8.0	8.2379
79002000	R	5	4	1	3.065	9.800	1987	12	8.0	7.7614
79002000	R	5	4	1	3.065	9.800	1988	13	7.0	7.1253
79002000	R	5	4	1	27.854	28.758	1982	1	8.8	8.7677
79002000	R	5	4	1	27.854	28.758	1983	2	8.7	8.6695
79002000	R	5	4	1	27.854	28.758	1986	5	8.0	8.2741
79002000	R	5	4	1	27.854	28.758	1987	6	8.0	8.0427
79002000	R	5	4	1	27.854	28.758	1988	7	8.0	7.7285
79002000	R	5	4	1	27.854	28.758	1989	8	7.0	7.3117
79002000	R	5	4	1	27.854	28.758	1990	9	7.0	6.7725
79002000	R	5	4	1	27.854	28.758	1991	10	7.0	6.0911
79002000	R	5	4	1	27.854	28.758	1992	11	4.5	5.2477
79002000	R	5	4	1	27.854	28.758	1993	12	3.5	4.2225
79002000	R	5	4	1	27.854	28.758	1994	13	3.5	2.9957
79002000	L	5	4	1	32.664	35.042	1982	1	8.6	8.3383
79002000	L	5	4	1	32.664	35.042	1983	2	8.0	8.1443
79002000	L	5	4	1	32.664	35.042	1986	5	7.0	7.6735
79002000	L	5	4	1	32.664	35.042	1987	6	7.0	6.9997
79002000	L	5	4	1	32.664	35.042	1988	7	7.0	6.1967
79002000	L	5	4	1	32.664	35.042	1989	8	6.0	5.3383
79002000	L	5	4	1	32.664	35.042	1990	9	3.5	4.4983
79002000	L	5	4	1	32.664	35.042	1991	10	3.5	3.7505
79002000	L	5	4	1	32.664	35.042	1992	11	3.5	3.1687
79030000	L	5	1	1	2.663	3.161	1982	1	8.1	8.0954
79030000	L	5	1	1	2.663	3.161	1983	2	7.9	7.9161
79030000	L	5	1	1	2.663	3.161	1986	5	8.0	7.7190
79030000	L	5	1	1	2.663	3.161	1987	6	7.2	7.7129
79030000	L	5	1	1	2.663	3.161	1988	7	7.8	7.7096
79030000	L	5	1	1	2.663	3.161	1989	8	8.0	7.6929
79030000	L	5	1	1	2.663	3.161	1990	9	7.5	7.6466
79030000	L	5	1	1	2.663	3.161	1991	10	7.7	7.5545
79030000	L	5	1	1	2.663	3.161	1992	11		7.4004
79030000	L	5	1	1	2.663	3.161	1993	12	7.0	7.1681
79030000	L	5	1	1	2.663	3.161	1994	13	7.0	6.8414
79030000	R	5	1	1	6.039	7.326	1981	1		9.0024
79030000	R	5	1	1	6.039	7.326	1982	2	8.0	8.6112
79030000	R	5	1	1	6.039	7.326	1983	3	8.1	8.3366
79030000	R	5	1	1	6.039	7.326	1986	6	7.9	7.9904
79030000	R	5	1	1	6.039	7.326	1987	7	8.0	7.9602
79030000	R	5	1	1	6.039	7.326	1988	8	8.3	7.9356

Table B – Continued

RDWYID	RDWSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
79030000	R	5	1	1	6.039	7.326	1989	9	8.1	7.8944
79030000	R	5	1	1	6.039	7.326	1990	10	8.2	7.8144
79030000	R	5	1	1	6.039	7.326	1991	11	7.8	7.6734
79030000	R	5	1	1	6.039	7.326	1992	12	7.5	7.4492
79030000	R	5	1	1	6.039	7.326	1993	13	7.5	7.1196
79030000	R	5	1	1	6.039	7.326	1994	14	6.5	6.6624
79110000	L	5	4	1	0.503	3.296	1976	1	8.8	9.1093
79110000	L	5	4	1	0.503	3.296	1977	2	8.9	8.8617
79110000	L	5	4	1	0.503	3.296	1978	3	8.7	8.6957
79110000	L	5	4	1	0.503	3.296	1979	4	8.7	8.5957
79110000	L	5	4	1	0.503	3.296	1981	6	8.5	8.5437
79110000	L	5	4	1	0.503	3.296	1982	7	8.0	8.5357
79110000	L	5	4	1	0.503	3.296	1983	8	8.8	8.5313
79110000	L	5	4	1	0.503	3.296	1986	11	8.9	8.4333
79110000	L	5	4	1	0.503	3.296	1987	12	8.0	8.2997
79110000	L	5	4	1	0.503	3.296	1988	13	8.0	8.0917
79110000	R	5	4	1	6.863	9.040	1986	1	8.7	8.5050
79110000	R	5	4	1	6.863	9.040	1987	2	8.0	8.2840
79110000	R	5	4	1	6.863	9.040	1988	3	8.0	8.1202
79110000	R	5	4	1	6.863	9.040	1989	4	8.0	7.9770
79110000	R	5	4	1	6.863	9.040	1990	5	8.0	7.8178
79110000	R	5	4	1	6.863	9.040	1991	6	8.0	7.6060
79110000	R	5	4	1	6.863	9.040	1992	7	7.0	7.3050
79110000	R	5	4	1	6.863	9.040	1993	8	6.0	6.8782
79110000	R	5	4	1	6.863	9.040	1994	9	6.0	6.2890
86010000	L	4	1	7	8.802	9.311	1988	1	8.5	8.5505
86010000	L	4	1	1	8.802	9.311	1989	2	8.1	8.5371
86010000	L	4	1	1	8.802	9.311	1990	3	8.0	8.5263
86010000	L	4	1	1	8.802	9.311	1991	4	8.0	8.4363
86010000	L	4	1	1	8.802	9.311	1992	5	8.2	8.1983
86010000	L	4	1	1	8.802	9.311	1993	6	8.0	7.7733
86010000	L	4	1	1	8.802	9.311	1994	7	8.0	7.1115
86014000	L	4	1	7	7.692	8.175	1986	1	7.0	7.0608
86014000	L	4	1	1	7.692	8.175	1987	2	7.0	6.8697
86014000	L	4	1	1	7.692	8.175	1988	3	6.2	6.7412
86014000	L	4	1	1	7.692	8.175	1989	4	6.5	6.6567
86014000	L	4	1	1	7.692	8.175	1990	5	6.7	6.5976
86014000	L	4	1	1	7.692	8.175	1991	6	6.0	6.5453
86014000	L	4	1	1	7.692	8.175	1992	7	6.4	6.4812
86014000	L	4	1	1	7.692	8.175	1993	8	6.5	6.3867
86014000	L	4	1	1	7.692	8.175	1994	9	6.2	6.2432
86015000	C	4	1	7	0.500	2.604	1986	1	8.0	8.0203
86015000	C	4	1	1	0.500	2.604	1987	2	8.0	7.9594
86015000	C	4	1	1	0.500	2.604	1988	3	7.8	7.8967
86015000	C	4	1	1	0.500	2.604	1989	4	8.0	7.8280
86015000	C	4	1	1	0.500	2.604	1990	5	7.7	7.7491
86015000	C	4	1	1	0.500	2.604	1991	6	7.6	7.6558
86015000	C	4	1	1	0.500	2.604	1992	7	8.0	7.5439
86015000	C	4	1	1	0.500	2.604	1993	8	8.2	7.4092
86015000	C	4	1	1	0.500	2.604	1994	9	8.2	7.2475
86020000	R	4	1	7	10.039	11.793	1982	1	8.7	8.8375
86020000	R	4	1	1	10.039	11.793	1983	2	8.9	8.7283
86020000	R	4	1	1	10.039	11.793	1986	5	8.8	8.6179

Table B -- Continued

RDWYID	RDWSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
86020000	R	4	1	1	10.039	11.793	1987	6	8.5	8.6055
86020000	R	4	1	1	10.039	11.793	1988	7	8.4	8.5813
86020000	R	4	1	1	10.039	11.793	1989	8	8.3	8.5309
86020000	R	4	1	1	10.039	11.793	1990	9	8.5	8.4399
86020000	R	4	1	1	10.039	11.793	1991	10	8.4	8.2939
86020000	R	4	1	1	10.039	11.793	1992	11	8.3	8.0785
86020000	R	4	1	1	10.039	11.793	1993	12	8.3	7.7793
86020000	R	4	1	1	10.039	11.793	1994	13	8.5	7.3819
86020000	L	4	1	7	11.793	14.618	1982	1	8.3	8.9063
86020000	L	4	1	1	11.793	14.618	1983	2	8.5	8.6839
86020000	L	4	1	1	11.793	14.618	1986	5	8.6	8.2627
86020000	L	4	1	1	11.793	14.618	1987	6	8.0	8.1723
86020000	L	4	1	1	11.793	14.618	1988	7	8.0	8.0909
86020000	L	4	1	1	11.793	14.618	1989	8	8.0	8.0089
86020000	L	4	1	1	11.793	14.618	1990	9	8.0	7.9167
86020000	L	4	1	1	11.793	14.618	1991	10	8.0	7.8047
86020000	L	4	1	1	11.793	14.618	1992	11	7.6	7.6633
86020000	L	4	1	1	11.793	14.618	1993	12	7.6	7.4829
86060000	L	4	1	1	0.498	3.503	1981	1	10.0	9.0543
86060000	L	4	1	7	0.498	3.503	1982	2	8.2	8.5125
86060000	L	4	1	1	0.498	3.503	1983	3	8.3	8.4285
86060000	L	4	1	1	0.498	3.503	1986	6	8.4	8.4165
86060000	L	4	1	1	0.498	3.503	1987	7	8.6	8.3213
86060000	L	4	1	1	0.498	3.503	1988	8	8.4	8.2871
86060000	L	4	1	1	0.498	3.503	1989	9	8.0	8.2385
86060000	L	4	1	1	0.498	3.503	1990	10	8.0	7.9221
86060000	L	4	1	1	0.498	3.503	1991	11	8.0	7.2633
86060000	L	4	1	1	0.498	3.503	1992	12	7.5	6.2405
86060000	L	4	1	1	0.498	3.503	1993	13	6.5	4.7835
86060000	L	4	1	1	0.498	3.503	1994	14	4.5	2.8221
86060000	R	4	1	1	0.498	3.503	1981	1	10.0	9.3752
86060000	R	4	1	7	0.498	3.503	1982	2	8.2	8.9494
86060000	R	4	1	1	0.498	3.503	1983	3	8.4	8.6472
86060000	R	4	1	1	0.498	3.503	1986	6	8.5	8.2602
86060000	R	4	1	1	0.498	3.503	1987	7	8.5	8.2304
86060000	R	4	1	1	0.498	3.503	1988	8	8.6	8.2132
86060000	R	4	1	1	0.498	3.503	1989	9	8.0	8.1864
86060000	R	4	1	1	0.498	3.503	1990	10	8.0	8.1278
86060000	R	4	1	1	0.498	3.503	1991	11	8.0	8.0152
86060000	R	4	1	1	0.498	3.503	1992	12	7.7	7.8264
86060000	R	4	1	1	0.498	3.503	1993	13	7.4	7.5392
86060000	R	4	1	1	0.498	3.503	1994	14	7.5	7.1314
86070000	R	4	4	1	4.648	5.137	1976	1	8.8	9.1191
86070000	R	4	4	1	4.648	5.137	1977	2	8.0	8.5648
86070000	R	4	4	1	4.648	5.137	1978	3	8.0	8.1557
86070000	R	4	4	1	4.648	5.137	1979	4	8.0	7.8708
86070000	R	4	4	1	4.648	5.137	1981	6	8.0	7.5901
86070000	R	4	4	1	4.648	5.137	1982	7	8.0	7.5896
86070000	R	4	4	1	4.648	5.137	1983	8	8.3	7.5532
86070000	R	4	4	1	4.648	5.137	1986	11	8.5	7.5513
86070000	R	4	4	1	4.648	5.137	1987	12	8.0	7.5428
86070000	R	4	4	1	4.648	5.137	1988	13	8.0	7.4307
86070000	R	4	4	1	4.648	5.137	1989	14	8.0	7.2328
86075000	R	4	4	1	0.000	2.126	1986	1	8.6	8.6993

Table B – Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
86075000	R	4	4	1	0.000	2.126	1987	2	8.8	8.6895
86075000	R	4	4	1	0.000	2.126	1988	3	8.6	8.6319
86075000	R	4	4	1	0.000	2.126	1989	4	8.6	8.6091
86075000	R	4	4	1	0.000	2.126	1990	5	8.5	8.4647
86075000	R	4	4	8	0.000	2.126	1991	6		8.2629
86075000	R	4	4	1	0.000	2.126	1992	7	8.0	8.0103
86100000	L	4	1	1	0.000	0.670	1981	1	8.9	8.6548
86100000	L	4	1	1	0.000	0.670	1982	2	8.1	8.3282
86100000	L	4	1	1	0.000	0.670	1983	3	7.9	8.2282
86100000	L	4	1	1	0.000	0.670	1986	6	8.3	8.2148
86100000	L	4	1	1	0.000	0.670	1987	7	8.0	8.1788
86100000	L	4	1	1	0.000	0.670	1988	8	8.6	8.1620
86100000	L	4	1	1	0.000	0.670	1989	9	7.9	8.1260
86100000	L	4	1	1	0.000	0.670	1990	10	8.0	8.0932
86100000	L	4	1	1	0.000	0.670	1991	11	8.1	8.0432
86100000	L	4	1	1	0.000	0.670	1992	12	8.3	8.0318
86100000	L	4	1	1	0.000	0.670	1993	13	7.5	7.7980
86100000	L	4	1	1	0.000	0.670	1994	14	7.5	7.4198
86120000	R	4	1	7	4.818	6.080	1983	1	7.4	8.2124
86120000	R	4	1	1	4.818	6.080	1986	4	7.9	7.7825
86120000	R	4	1	1	4.818	6.080	1987	5	7.5	7.7212
86120000	R	4	1	1	4.818	6.080	1988	6	7.6	7.6519
86120000	R	4	1	1	4.818	6.080	1989	7	7.5	7.5452
86120000	R	4	1	1	4.818	6.080	1990	8	7.5	7.3717
86220000	R	4	1	1	3.967	6.002	1979	1	7.0	7.0046
86220000	R	4	1	1	3.967	6.002	1981	3	7.0	7.0010
86220000	R	4	1	1	3.967	6.002	1982	4	7.0	6.9983
86220000	R	4	1	1	3.967	6.002	1983	5	7.0	6.9947
86220000	R	4	1	1	3.967	6.002	1986	8	7.0	6.9908
86220000	R	4	1	1	3.967	6.002	1987	9	7.0	6.9782
86220000	R	4	1	1	3.967	6.002	1988	10	6.9	6.9425
86220000	R	4	1	1	3.967	6.002	1989	11	7.0	6.8876
86220000	R	4	1	1	3.967	6.002	1990	12	6.8	6.8099
87001000	R	6	1	7	0.000	2.405	1990	1	9.0	8.9614
87001000	R	6	1	1	0.000	2.405	1991	2	8.6	8.7676
87001000	R	6	1	1	0.000	2.405	1992	3	9.0	8.7540
87001000	R	6	1	1	0.000	2.405	1993	4	8.6	8.7520
87001000	R	6	1	1	0.000	2.405	1994	5	8.5	8.4570
87002000	L	6	1	7	0.294	2.520	1987	1	8.2	8.7525
87002000	L	6	1	1	0.294	2.520	1988	2	7.8	8.3667
87002000	L	6	1	1	0.294	2.520	1989	3	8.3	8.1489
87002000	L	6	1	1	0.294	2.520	1990	4	8.4	8.0493
87002000	L	6	1	1	0.294	2.520	1991	5	7.9	8.0181
87002000	L	6	1	1	0.294	2.520	1992	6	8.0	8.0055
87002000	L	6	1	1	0.294	2.520	1993	7	7.7	7.9617
87002000	L	6	1	1	0.294	2.520	1994	8	8.1	7.8369
87060000	C	6	1	7	3.932	4.514	1982	1	8.0	8.0676
87060000	C	6	1	1	3.932	4.514	1983	2	8.0	7.9429
87060000	C	6	1	1	3.932	4.514	1986	5	7.7	7.7392
87060000	C	6	1	1	3.932	4.514	1987	6	7.3	7.7081
87060000	C	6	1	1	3.932	4.514	1988	7	7.6	7.6854
87060000	C	6	1	1	3.932	4.514	1989	8	7.7	7.6651
87060000	C	6	1	1	3.932	4.514	1990	9	7.8	7.6412

Table B – Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
87060000	C	6	1	1	3.932	4.514	1991	10	6.9	7.6077
87060000	C	6	1	1	3.932	4.514	1992	11	7.9	7.5586
87060000	C	6	1	1	3.932	4.514	1993	12	7.8	7.4879
87060000	C	6	1	1	3.932	4.514	1994	13	7.8	7.3896
87080000	C	6	1	7	0.000	0.648	1982	1	7.8	8.4548
87080000	C	6	1	1	0.000	0.648	1983	2	7.7	8.063
87080000	C	6	1	1	0.000	0.648	1987	6	7.3	7.6070
87080000	C	6	1	1	0.000	0.648	1988	7	7.6	7.6022
87080000	C	6	1	1	0.000	0.648	1989	8	8.0	7.5998
87080000	C	6	1	1	0.000	0.648	1990	9	8.4	7.5548
87080000	C	6	1	1	0.000	0.648	1991	10	7.7	7.4342
87080000	C	6	1	1	0.000	0.648	1992	11	6.7	7.2098
87080000	C	6	1	1	0.000	0.648	1993	12	7.0	6.8510
87080000	C	6	1	1	0.000	0.648	1994	13	7.3	6.3272
87090000	C	6	1	1	13.690	14.795	1981	1	8.7	8.6840
87090000	C	6	1	1	13.690	14.795	1982	2	7.9	8.0299
87090000	C	6	1	1	13.690	14.795	1983	3	7.8	7.6246
87090000	C	6	1	1	13.690	14.795	1986	6	7.3	7.5031
87090000	C	6	1	1	13.690	14.795	1987	7	7.4	7.4944
87090000	C	6	1	1	13.690	14.795	1988	8	7.5	7.4474
87090000	C	6	1	1	13.690	14.795	1989	9	7.5	7.3795
87090000	C	6	1	1	13.690	14.795	1990	10	7.4	7.3691
87090000	C	6	1	1	13.690	14.795	1991	11		7.0750
87090000	C	6	1	1	13.690	14.795	1992	12	6.5	6.5599
87120000	R	6	1	1	0.000	2.002	1983	1	7.0	8.5141
87120000	R	6	1	1	0.000	2.002	1986	4	7.8	8.1094
87120000	R	6	1	1	0.000	2.002	1987	5	8.0	8.0553
87120000	R	6	1	1	0.000	2.002	1988	6	8.0	8.0266
87120000	R	6	1	1	0.000	2.002	1989	7	8.0	8.0143
87120000	R	6	1	1	0.000	2.002	1990	8	8.0	8.0094
87120000	R	6	1	1	0.000	2.002	1991	9	8.0	8.0029
87120000	R	6	1	1	0.000	2.002	1992	10	8.1	7.9858
87120000	R	6	1	1	0.000	2.002	1993	11	7.9	7.9491
87120000	R	6	1	1	0.000	2.002	1994	12	8.0	7.8838
87150000	C	6	1	1	2.633	3.556	1987	1	8.0	7.9934
87150000	C	6	1	1	2.633	3.556	1988	2	7.8	7.9839
87150000	C	6	1	1	2.633	3.556	1989	3	8.2	7.9783
87150000	C	6	1	1	2.633	3.556	1990	4	7.9	7.9482
87150000	C	6	1	1	2.633	3.556	1991	5	7.3	7.9402
87150000	C	6	1	1	2.633	3.556	1992	6	8.1	7.8527
87150000	C	6	1	1	2.633	3.556	1993	7	7.7	7.7118
87150000	C	6	1	1	2.633	3.556	1994	8	7.5	7.5079
87240000	R	6	1	7	1.742	2.230	1987	1	6.9	9.0060
87240000	R	6	1	1	1.742	2.230	1988	2	7.1	8.4466
87240000	R	6	1	1	1.742	2.230	1989	3	7.5	8.1112
87240000	R	6	1	1	1.742	2.230	1990	4	8.0	7.9392
87240000	R	6	1	1	1.742	2.230	1991	5	7.4	7.8700
87240000	R	6	1	1	1.742	2.230	1992	6	7.9	7.8430
87240000	R	6	1	1	1.742	2.230	1993	7	7.7	7.7976
87240000	R	6	1	1	1.742	2.230	1994	8	7.7	7.6732
88010000	R	4	1	1	20.126	22.088	1986	1	9.0	9.4990
88010000	R	4	1	1	20.126	22.088	1987	2	9.3	9.2648
88010000	R	4	1	1	20.126	22.088	1988	3	9.0	9.0964

Table B -- Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
88010000	R	4	1	1	20.126	22.088	1989	4	9.0	8.9752
88010000	R	4	1	1	20.126	22.088	1990	5	9.0	8.8826
88010000	R	4	1	1	20.126	22.088	1991	6	8.7	8.8000
88010000	R	4	1	1	20.126	22.088	1992	7	8.2	8.7088
88010000	R	4	1	1	20.126	22.088	1993	8	8.6	8.5904
88010000	R	4	1	1	20.126	22.088	1994	9	8.9	8.4262
88070000	C	4	1	7	17.329	22.245	1987	1	8.1	9.0049
88070000	C	4	1	1	17.329	22.245	1988	2	8.8	8.8310
88070000	C	4	1	1	17.329	22.245	1989	3	8.7	8.6793
88070000	C	4	1	1	17.329	22.245	1990	4	8.7	8.5372
88070000	C	4	1	1	17.329	22.245	1991	5	8.4	8.3921
88070000	C	4	1	1	17.329	22.245	1992	6	7.6	8.2314
88070000	C	4	1	1	17.329	22.245	1993	7	8.6	8.0425
88070000	C	4	1	1	17.329	22.245	1994	8	7.8	7.8128
88081000	R	4	4	7	4.179	5.713	1989	1	9.4	9.4164
88081000	R	4	4	1	4.179	5.713	1990	2	9.0	8.9452
88081000	R	4	4	1	4.179	5.713	1991	3	8.6	8.6540
88081000	R	4	4	1	4.179	5.713	1992	4	8.2	8.5074
88081000	R	4	4	1	4.179	5.713	1993	5	8.5	8.5064
88081000	R	4	4	1	4.179	5.713	1994	6	8.5	8.4700
88081000	R	4	4	1	6.165	9.525	1976	1	8.0	9.1426
88081000	R	4	4	1	6.165	9.525	1977	2	10.0	8.8615
88081000	R	4	4	1	6.165	9.525	1978	3	8.9	8.6504
88081000	R	4	4	1	6.165	9.525	1979	4	9.0	8.4991
88081000	R	4	4	1	6.165	9.525	1981	6	8.0	8.3351
88081000	R	4	4	1	6.165	9.525	1982	7	8.0	8.3020
88081000	R	4	4	1	6.165	9.525	1983	8	8.0	8.2879
88081000	R	4	4	1	6.165	9.525	1986	11	8.0	8.2576
88081000	R	4	4	1	6.165	9.525	1987	12	8.0	8.2175
88081000	R	4	4	1	6.165	9.525	1988	13	8.0	8.1454
88081000	R	4	4	1	6.165	9.525	1989	14	8.0	8.0311
88081000	R	4	4	1	6.165	9.525	1990	15	8.0	7.8644
88081000	R	4	4	1	6.165	9.525	1991	16	8.0	7.6351
89010000	R	4	1	7	18.880	19.409	1987	1	10.0	9.7955
89010000	R	4	1	1	18.880	19.409	1988	2	8.6	8.9726
89010000	R	4	1	1	18.880	19.409	1989	3	8.5	8.6103
89010000	R	4	1	1	18.880	19.409	1990	4	8.8	8.5835
89010000	R	4	1	1	18.880	19.409	1991	5	8.9	8.5770
89010000	R	4	1	1	18.880	19.409	1992	6	8.4	8.5376
89010000	R	4	1	1	18.880	19.409	1993	7	8.0	8.3471
89010000	R	4	1	1	18.880	19.409	1994	8	7.9	7.7228
89040000	C	4	1	7	0.000	0.528	1983	1	8.4	8.9852
89040000	C	4	1	1	0.000	0.528	1986	4	8.4	8.4877
89040000	C	4	1	1	0.000	0.528	1987	5	8.6	8.4772
89040000	C	4	1	1	0.000	0.528	1988	6	8.4	8.4761
89040000	C	4	1	1	0.000	0.528	1989	7	8.4	8.4620
89040000	C	4	1	1	0.000	0.528	1990	8	8.4	8.3545
89040000	C	4	1	1	0.000	0.528	1991	9	8.3	8.1196
89040000	C	4	1	1	0.000	0.528	1992	10	8.0	7.7117
89040000	C	4	1	1	0.000	0.528	1993	11	6.5	7.0852
89040000	C	4	1	1	0.000	0.528	1994	12	6.5	6.1945
89050000	C	4	1	7	4.749	7.408	1987	1	7.7	8.4792
89050000	C	4	1	7	4.749	7.408	1988	2	7.7	8.2785

Table B -- Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
89050000	C	4	1	1	4.749	7.408	1989	3	7.9	8.0378
89050000	C	4	1	1	4.749	7.408	1990	4	7.9	7.7703
89050000	C	4	1	1	4.749	7.408	1991	5	7.6	7.4892
89050000	C	4	1	1	4.749	7.408	1992	6	7.0	7.2077
89050000	C	4	1	1	4.749	7.408	1993	7	7.2	6.9390
89050000	C	4	1	1	4.749	7.408	1994	8	6.9	6.6963
89060000	R	4	1	7	24.620	25.357	1988	1	8.8	8.7955
89060000	R	4	1	1	24.620	25.357	1989	2	8.6	8.6090
89060000	R	4	1	1	24.620	25.357	1990	3	8.6	8.4489
89060000	R	4	1	1	24.620	25.357	1991	4	8.3	8.3068
89060000	R	4	1	1	24.620	25.357	1992	5	8.0	8.1743
89060000	R	4	1	1	24.620	25.357	1993	6	8.2	8.0430
89060000	R	4	1	1	24.620	25.357	1994	7	7.9	7.9045
89070000	C	4	1	7	14.691	15.400	1982	1	8.6	8.6146
89070000	C	4	1	1	14.691	15.400	1983	2	8.4	8.3725
89070000	C	4	1	1	14.691	15.400	1986	5	8.0	8.0290
89070000	C	4	1	1	14.691	15.400	1987	6	8.0	7.9981
89070000	C	4	1	1	14.691	15.400	1988	7	8.0	7.9870
89070000	C	4	1	1	14.691	15.400	1989	8	8.0	7.9825
89070000	C	4	1	1	14.691	15.400	1990	9	8.0	7.9714
89070000	C	4	1	1	14.691	15.400	1991	10	7.9	7.9405
89070000	C	4	1	1	14.691	15.400	1992	11	7.0	7.8766
89070000	C	4	1	1	14.691	15.400	1993	12	7.8	7.7665
89070000	C	4	1	1	14.691	15.400	1994	13	7.6	7.5970
90020000	C	6	1	7	19.581	20.418	1987	1	8.8	8.7619
90020000	C	6	1	1	19.581	20.418	1988	2	8.6	8.7001
90020000	C	6	1	1	19.581	20.418	1989	3	8.6	8.6003
90020000	C	6	1	1	19.581	20.418	1990	4	8.7	8.4625
90020000	C	6	1	1	19.581	20.418	1991	5	8.0	8.2867
90020000	C	6	1	1	19.581	20.418	1992	6	8.2	8.0729
90020000	C	6	1	1	19.581	20.418	1993	7	7.8	7.8211
90020000	C	6	1	1	19.581	20.418	1994	8		7.5313
90040000	C	6	1	1	6.546	8.988	1986	1	8.5	9.0790
90040000	C	6	1	1	6.546	8.988	1987	2	8.8	8.7567
90040000	C	6	1	1	6.546	8.988	1988	3	8.8	8.5860
90040000	C	6	1	1	6.546	8.988	1989	4	8.4	8.5183
90040000	C	6	1	1	6.546	8.988	1990	5	8.6	8.5050
90040000	C	6	1	1	6.546	8.988	1991	6	8.0	8.4975
90040000	C	6	1	1	6.546	8.988	1992	7	8.7	8.4472
90040000	C	6	1	1	6.546	8.988	1993	8	8.3	8.3055
90040000	C	6	1	1	6.546	8.988	1994	9	8.5	8.0238
91020000	C	1	1	7	15.449	17.057	1988	1	9.4	9.4143
91020000	C	1	1	1	15.449	17.057	1989	2	9.0	9.0999
91020000	C	1	1	1	15.449	17.057	1990	3	9.0	8.7997
91020000	C	1	1	1	15.449	17.057	1991	4	8.6	8.5137
91020000	C	1	1	1	15.449	17.057	1992	5	8.0	8.2419
91020000	C	1	1	1	15.449	17.057	1993	6	8.0	7.9843
91020000	C	1	1	1	15.449	17.057	1994	7	7.8	7.7409
91070000	C	1	1	1	0.340	3.085	1978	1	8.3	8.4779
91070000	C	1	1	1	0.340	3.085	1979	2	8.6	8.2927
91070000	C	1	1	1	0.340	3.085	1981	4	8.0	8.0831
91070000	C	1	1	1	0.340	3.085	1982	5	8.0	8.0383
91070000	C	1	1	1	0.340	3.085	1983	6	8.0	8.0211

Table B – Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
91070000	C	1	1	1	0.340	3.085	1986	9	8.0	8.0199
91070000	C	1	1	1	0.340	3.085	1987	10	8.0	8.0063
91070000	C	1	1	1	0.340	3.085	1988	11	8.0	7.9669
91070000	C	1	1	1	0.340	3.085	1989	12	8.0	7.8927
91070000	C	1	1	1	0.340	3.085	1990	13	8.0	7.7735
91070000	C	1	1	1	0.340	3.085	1991	14	8.0	7.5991
91070000	C	1	1	1	0.340	3.085	1992	15	7.0	7.3593
91070000	C	1	1	1	0.340	3.085	1993	16	7.0	7.0439
91070000	C	1	1	1	0.340	3.085	1994	17	7.0	6.6427
92030000	R	5	1	1	9.789	10.505	1982	1	8.7	8.8610
92030000	R	5	1	1	9.789	10.505	1983	2	8.5	8.3494
92030000	R	5	1	1	9.789	10.505	1986	5	8.0	7.7998
92030000	R	5	1	1	9.789	10.505	1987	6	8.0	7.7984
92030000	R	5	1	1	9.789	10.505	1988	7	7.5	7.7830
92030000	R	5	1	1	9.789	10.505	1989	8	7.5	7.7790
92030000	R	5	1	1	9.789	10.505	1990	9	7.5	7.7418
92030000	R	5	1	1	9.789	10.505	1991	10	7.5	7.5830
92030000	R	5	1	1	9.789	10.505	1992	11	7.5	7.2820
92030000	R	5	1	1	9.789	10.505	1993	12	7.5	6.7974
92030000	R	5	1	1	9.789	10.505	1994	13	5.5	6.0878
92030000	L	5	1	1	11.273	12.548	1983	1	8.0	7.9411
92030000	L	5	1	1	11.273	12.548	1986	4	7.5	7.6516
92030000	L	5	1	1	11.273	12.548	1987	5	7.5	7.5883
92030000	L	5	1	1	11.273	12.548	1988	6	7.5	7.5096
92030000	L	5	1	1	11.273	12.548	1989	7	7.5	7.3963
92030000	L	5	1	1	11.273	12.548	1990	8	7.5	7.2292
92030000	L	5	1	1	11.273	12.548	1991	9	7.5	6.9891
92030000	L	5	1	1	11.273	12.548	1992	10	6.0	6.6568
92030000	L	5	1	1	11.273	12.548	1993	11	6.0	6.2131
92030000	L	5	1	1	11.273	12.548	1994	12	6.0	5.6388
92060000	C	5	1	1	0.250	1.568	1976	1	9.0	9.0497
92060000	C	5	1	1	0.250	1.568	1977	2	8.6	8.7337
92060000	C	5	1	1	0.250	1.568	1978	3	8.0	8.4877
92060000	C	5	1	1	0.250	1.568	1979	4	8.0	8.3033
92060000	C	5	1	1	0.250	1.568	1981	6	8.0	8.0857
92060000	C	5	1	1	0.250	1.568	1982	7	8.0	8.0377
92060000	C	5	1	1	0.250	1.568	1983	8	8.0	8.0357
92060000	C	5	1	1	0.250	1.568	1986	11	8.0	8.0317
92060000	C	5	1	1	0.250	1.568	1987	12	8.0	8.0297
92060000	C	5	1	1	0.250	1.568	1988	13	8.0	8.0137
92060000	C	5	1	1	0.250	1.568	1989	14	8.0	7.9993
92060000	C	5	1	1	0.250	1.568	1990	15	8.0	7.9381
92060000	C	5	1	1	0.250	1.568	1991	16	8.0	7.8377
92060000	C	5	1	1	0.250	1.568	1992	17	7.5	7.6897
92060000	C	5	1	1	0.250	1.568	1993	18	7.0	7.4857
92060000	C	5	1	1	0.250	1.568	1994	19	7.0	7.2173
92130000	L	5	4	7	3.542	6.517	1983	1	8.7	9.3891
92130000	L	5	4	1	3.542	6.517	1986	4	8.2	8.7621
92130000	L	5	4	1	3.542	6.517	1987	5	8.9	8.7597
92130000	L	5	4	1	3.542	6.517	1988	6	9.0	8.7511
92130000	L	5	4	1	3.542	6.517	1989	7	8.9	8.7399
92130000	L	5	4	1	3.542	6.517	1990	8	8.9	8.7297
92130000	L	5	4	1	3.542	6.517	1991	9	8.5	8.6251
92130000	L	5	4	1	3.542	6.517	1992	10	8.3	8.4099
92130000	L	5	4	1	3.542	6.517	1993	11	8.5	8.0481

Table B – Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
92130000	L	5	4	1	3.542	6.517	1994	12	7.8	7.5037
93004000	R	4	1	1	2.523	3.061	1978	1	8.7	9.3209
93004000	R	4	1	1	2.523	3.061	1979	2	7.0	8.7362
93004000	R	4	1	1	2.523	3.061	1981	4	7.0	8.1452
93004000	R	4	1	1	2.523	3.061	1982	5	7.0	8.0465
93004000	R	4	1	1	2.523	3.061	1983	6	8.0	8.0174
93004000	R	4	1	1	2.523	3.061	1986	9	7.8	7.8857
93004000	R	4	1	1	2.523	3.061	1987	10	8.0	7.6730
93004000	R	4	1	1	2.523	3.061	1988	11	7.5	7.2989
93004000	R	4	1	1	2.523	3.061	1989	12	7.0	6.7172
93004000	R	4	1	1	2.523	3.061	1990	13	7.0	5.8817
93004000	R	4	1	1	2.523	3.061	1991	14	4.0	4.7462
93004000	R	4	1	1	2.523	3.061	1992	15	0.0	3.2645
93004000	R	4	1	1	2.523	3.061	1993	16	0.0	1.3904
93010000	R	4	1	1	2.867	4.977	1979	1	8.2	8.1904
93010000	R	4	1	1	2.867	4.977	1981	3	8.0	8.0412
93010000	R	4	1	1	2.867	4.977	1982	4	8.0	8.0077
93010000	R	4	1	1	2.867	4.977	1983	5	8.0	7.9912
93010000	R	4	1	1	2.867	4.977	1986	8	8.0	7.9657
93010000	R	4	1	1	2.867	4.977	1987	9	8.0	7.9392
93010000	R	4	1	1	2.867	4.977	1988	10	8.0	7.8907
93010000	R	4	1	1	2.867	4.977	1989	11	8.0	7.8124
93010000	R	4	1	1	2.867	4.977	1990	12	7.7	7.6965
93010000	R	4	1	1	2.867	4.977	1991	13	7.6	7.5352
93010000	L	4	1	1	5.879	6.829	1978	1	8.3	9.0908
93010000	L	4	1	1	5.879	6.829	1979	2	8.4	8.8585
93010000	L	4	1	1	5.879	6.829	1981	4	8.0	8.6063
93010000	L	4	1	1	5.879	6.829	1982	5	8.0	8.5516
93010000	L	4	1	1	5.879	6.829	1983	6	8.2	8.5213
93010000	L	4	1	1	5.879	6.829	1986	9	8.2	8.4028
93010000	L	4	1	1	5.879	6.829	1987	10	8.4	8.2961
93010000	L	4	1	1	5.879	6.829	1988	11	8.3	8.1268
93010000	L	4	1	1	5.879	6.829	1989	12	8.1	7.8775
93010000	L	4	1	1	5.879	6.829	1990	13	7.8	7.5308
93050000	C	4	1	7	3.812	5.741	1986	1	7.5	8.8888
93050000	C	4	1	1	3.812	5.741	1987	2	8.0	8.2837
93050000	C	4	1	1	3.812	5.741	1988	3	8.0	7.9170
93050000	C	4	1	1	3.812	5.741	1989	4	8.0	7.7185
93050000	C	4	1	1	3.812	5.741	1990	5	7.4	7.6180
93050000	C	4	1	1	3.812	5.741	1991	6	7.2	7.5453
93050000	C	4	1	1	3.812	5.741	1992	7	7.4	7.4302
93050000	C	4	1	1	3.812	5.741	1993	8	7.2	7.2025
93050000	C	4	1	1	3.812	5.741	1994	9	7.5	6.7920
93060000	C	4	1	1	0.000	0.970	1978	1	8.0	8.0110
93060000	C	4	1	1	0.000	0.970	1979	2	8.0	8.0012
93060000	C	4	1	1	0.000	0.970	1981	4	8.0	7.9858
93060000	C	4	1	1	0.000	0.970	1982	5	8.0	7.9766
93060000	C	4	1	1	0.000	0.970	1983	6	8.0	7.9640
93060000	C	4	1	1	0.000	0.970	1986	9	7.7	7.8878
93060000	C	4	1	1	0.000	0.970	1987	10	7.9	7.8436
93060000	C	4	1	1	0.000	0.970	1988	11	7.7	7.7870
93060000	C	4	1	1	0.000	0.970	1989	12	7.9	7.7162
93060000	C	4	1	1	0.000	0.970	1990	13	7.8	7.6294
93060000	C	4	1	1	0.000	0.970	1991	14	7.5	7.5248

Table B – Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
93060000	C	4	1	1	0.000	0.970	1992	15	7.1	7.4006
93060000	C	4	1	1	0.000	0.970	1993	16	7.4	7.2550
93060000	C	4	1	1	0.000	0.970	1994	17	7.1	7.0862
93100000	R	4	1	7	6.103	11.940	1983	1	8.6	8.6273
93100000	R	4	1	1	6.103	11.940	1986	4	8.5	8.2781
93100000	R	4	1	1	6.103	11.940	1987	5	8.0	8.1845
93100000	R	4	1	1	6.103	11.940	1988	6	8.0	8.0963
93100000	R	4	1	1	6.103	11.940	1989	7	8.0	8.0099
93100000	R	4	1	1	6.103	11.940	1990	8	8.0	7.9217
93100000	R	4	1	1	6.103	11.940	1991	9	8.0	7.8281
93100000	R	4	1	1	6.103	11.940	1992	10	7.6	7.7255
93100000	R	4	1	1	6.103	11.940	1993	11	8.0	7.6103
93110000	C	4	1	7	19.355	22.865	1986	1	8.5	8.6023
93110000	C	4	1	1	19.355	22.865	1987	2	8.6	8.3307
93110000	C	4	1	1	19.355	22.865	1988	3	8.0	8.0375
93110000	C	4	1	1	19.355	22.865	1989	4	7.0	7.4893
93110000	C	4	1	1	19.355	22.865	1990	5	7.0	6.4527
93110000	C	4	1	1	19.355	22.865	1991	6	4.5	4.6943
93110000	C	4	1	1	19.355	22.865	1992	7	2.0	1.9807
93110000	C	4	1	1	19.355	22.865	1993	8	2.0	1.5210
93110000	C	4	1	1	19.355	22.865	1994	9	1.5	0.0000
93140000	C	4	1	7	13.888	19.350	1982	1	8.3	8.2507
93140000	C	4	1	1	13.888	19.350	1983	2	7.5	7.6000
93140000	C	4	1	1	13.888	19.350	1986	5	6.6	6.3799
93140000	C	4	1	1	13.888	19.350	1987	6	5.9	6.0232
93140000	C	4	1	1	13.888	19.350	1988	7	5.3	5.5945
93140000	C	4	1	1	13.888	19.350	1989	8	5.4	5.0356
93140000	C	4	1	1	13.888	19.350	1990	9	4.1	4.2883
93140000	C	4	1	1	13.888	19.350	1991	10	3.3	3.2944
93140000	C	4	1	1	13.888	19.350	1992	11	0.0	1.9957
93140000	C	4	1	1	13.888	19.350	1993	12	0.0	0.3340
93140000	C	4	1	1	13.888	19.350	1994	13	0.0	0.0000
93150000	R	4	1	1	0.000	1.756	1977	1	7.5	7.5652
93150000	R	4	1	1	0.000	1.756	1978	2	7.1	7.1261
93150000	R	4	1	1	0.000	1.756	1979	3	7.0	6.8444
93150000	R	4	1	1	0.000	1.756	1981	5	7.0	6.7093
93150000	R	4	1	1	0.000	1.756	1982	6	6.0	6.6796
93150000	R	4	1	1	0.000	1.756	1983	7	6.8	6.6377
93150000	R	4	1	1	0.000	1.756	1986	10	6.9	6.6308
93150000	R	4	1	1	0.000	1.756	1987	11	6.7	6.5852
93150000	R	4	1	1	0.000	1.756	1988	12	6.3	6.3431
93150000	R	4	1	1	0.000	1.756	1989	13	6.9	5.9524
93160000	C	4	1	1	0.144	5.515	1981	1	8.0	8.2433
93160000	C	4	1	1	0.144	5.515	1982	2	8.0	8.1239
93160000	C	4	1	1	0.144	5.515	1983	3	8.0	8.0459
93160000	C	4	1	1	0.144	5.515	1986	6	8.0	7.9989
93160000	C	4	1	1	0.144	5.515	1987	7	8.0	7.9073
93160000	C	4	1	1	0.144	5.515	1988	8	8.0	7.6539
93160000	C	4	1	1	0.144	5.515	1989	9	7.0	7.0217
93160000	C	4	1	1	0.144	5.515	1990	10	7.0	6.1037
93160000	C	4	1	1	0.144	5.515	1991	11	4.5	4.8543
93160000	C	4	1	1	0.144	5.515	1992	12	2.0	3.2279
93160000	C	4	1	1	0.144	5.515	1993	13	2.0	1.1789

Table B -- Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
93160000	C	4	1	1	12.145	15.100	1981	1	9.0	8.5379
93160000	C	4	1	1	12.145	15.100	1982	2	8.0	8.4457
93160000	C	4	1	1	12.145	15.100	1983	3	8.0	8.3443
93160000	C	4	1	1	12.145	15.100	1986	6	8.0	7.8589
93160000	C	4	1	1	12.145	15.100	1987	7	8.0	7.5947
93160000	C	4	1	1	12.145	15.100	1988	8	7.0	7.2583
93160000	C	4	1	1	12.145	15.100	1989	9	7.0	6.8371
93160000	C	4	1	1	12.145	15.100	1990	10	7.0	6.3185
93160000	C	4	1	1	12.145	15.100	1991	11	4.5	5.6899
93160000	C	4	1	1	12.145	15.100	1992	12	4.5	4.9387
93160000	C	4	1	1	12.145	15.100	1993	13	4.5	4.0523
93210000	C	4	1	7	13.793	19.514	1990	1	9.0	9.0000
93210000	C	4	1	1	13.793	19.514	1991	2	8.5	8.4998
93210000	C	4	1	1	13.793	19.514	1992	3	8.3	8.2992
93210000	C	4	1	1	13.793	19.514	1993	4	9.0	8.2230
93210000	C	4	1	1	13.793	19.514	1994	5	8.1	8.0960
93220000	R	4	4	1	9.252	9.820	1986	1	8.3	8.4925
93220000	R	4	4	1	9.252	9.820	1987	2	8.8	8.3273
93220000	R	4	4	1	9.252	9.820	1988	3	8.0	8.2161
93220000	R	4	4	1	9.252	9.820	1989	4	8.0	8.1349
93220000	R	4	4	1	9.252	9.820	1990	5	8.0	8.0597
93220000	R	4	4	1	9.252	9.820	1991	6	8.0	7.9665
93220000	R	4	4	1	9.252	9.820	1992	7	8.0	7.8313
93220000	R	4	4	1	9.252	9.820	1993	8	8.0	7.6301
93220000	L	4	4	1	10.559	11.340	1976	1	8.4	8.8699
93220000	L	4	4	1	10.559	11.340	1977	2	8.0	8.5468
93220000	L	4	4	1	10.559	11.340	1978	3	7.7	8.3235
93220000	L	4	4	1	10.559	11.340	1979	4	8.0	8.1820
93220000	L	4	4	1	10.559	11.340	1981	6	8.0	8.0740
93220000	L	4	4	1	10.559	11.340	1982	7	8.0	8.0724
93220000	L	4	4	1	10.559	11.340	1983	8	8.7	8.0683
93220000	L	4	4	1	10.559	11.340	1986	11	8.0	7.9699
93220000	L	4	4	1	10.559	11.340	1987	12	8.0	7.8348
93220000	L	4	4	1	10.559	11.340	1988	13	8.0	7.6195
93220000	L	4	4	1	10.559	11.340	1989	14	8.0	7.3060
93220000	L	4	4	1	10.559	11.340	1990	15	7.0	6.8763
93220000	R	4	4	1	14.154	15.240	1976	1	8.0	9.1924
93220000	R	4	4	1	14.154	15.240	1977	2	8.0	8.8703
93220000	R	4	4	1	14.154	15.240	1978	3	8.3	8.6644
93220000	R	4	4	1	14.154	15.240	1979	4	8.0	8.6009
93220000	R	4	4	1	14.154	15.240	1981	6	8.0	8.5588
93220000	R	4	4	1	14.154	15.240	1982	7	8.0	8.5525
93220000	R	4	4	1	14.154	15.240	1983	8	8.0	8.5364
93220000	R	4	4	1	14.154	15.240	1986	11	8.3	8.5219
93220000	R	4	4	1	14.154	15.240	1987	12	8.8	8.3773
93220000	R	4	4	1	14.154	15.240	1988	13	8.0	8.1124
93220000	R	4	4	1	14.154	15.240	1989	14	8.0	7.7195
93220000	R	4	4	1	14.154	15.240	1990	15	8.0	7.1764
93220000	R	4	4	1	14.154	15.240	1991	16	8.0	6.4609
93220000	R	4	4	1	14.154	15.240	1992	17	3.5	5.5508
93220000	R	4	4	1	14.154	15.240	1993	18	3.5	4.4239
93220000	R	4	4	1	14.154	15.240	1994	19	3.5	3.0580
93290000	C	4	1	7	0	2.097	1983	1	8.5	9.0454
93290000	C	4	1	1	0	2.097	1986	4	8.3	8.5282

Table B – Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
93290000	C	4	1	1	0.000	2.097	1987	5	9.0	8.4698
93290000	C	4	1	1	0.000	2.097	1988	6	8.5	8.4364
93290000	C	4	1	1	0.000	2.097	1989	7	8.5	8.4088
93290000	C	4	1	1	0.000	2.097	1990	8	8.0	8.3678
93290000	C	4	1	1	0.000	2.097	1991	9	7.8	8.2942
93290000	C	4	1	1	0.000	2.097	1992	10	8.0	8.1688
93290000	C	4	1	1	0.000	2.097	1993	11	8.1	7.9724
93290000	C	4	1	1	0.000	2.097	1994	12	8.4	7.6858
94001000	R	4	4	7	0.000	4.712	1990	1	9.0	8.9928
94001000	R	4	4	1	0.000	4.712	1991	2	8.0	8.0284
94001000	R	4	4	1	0.000	4.712	1992	3	8.0	8.0280
94001000	R	4	4	1	0.000	4.712	1993	4	8.4	7.9568
94001000	R	4	4	1	0.000	4.712	1994	5	8.0	7.4920
94001000	L	4	4	7	0.000	4.712	1990	1	8.9	8.9514
94001000	L	4	4	1	0.000	4.712	1991	2	8.0	8.3944
94001000	L	4	4	1	0.000	4.712	1992	3	8.0	8.3092
94001000	L	4	4	1	0.000	4.712	1993	4	8.4	8.1960
94001000	L	4	4	1	0.000	4.712	1994	5	8.3	7.5550
94001000	R	4	4	7	20.312	23.460	1989	1	8.7	9.4572
94001000	R	4	4	1	20.312	23.460	1990	2	8.7	8.8646
94001000	R	4	4	1	20.312	23.460	1991	3	8.7	8.4724
94001000	R	4	4	1	20.312	23.460	1992	4	8.1	8.2308
94001000	R	4	4	1	20.312	23.460	1993	5	8.1	8.0900
94001000	R	4	4	1	20.312	23.460	1994	6	8.1	8.0002
94001000	L	4	4	7	20.312	23.460	1989	1	8.6	8.5958
94001000	L	4	4	1	20.312	23.460	1990	2	8.5	8.5176
94001000	L	4	4	1	20.312	23.460	1991	3	8.5	8.4756
94001000	L	4	4	1	20.312	23.460	1992	4	8.3	8.4200
94001000	L	4	4	1	20.312	23.460	1993	5	8.4	8.3010
94001000	L	4	4	1	20.312	23.460	1994	6	8.5	8.0688
94005000	L	4	1	7	1.769	2.474	1987	1	9.1	8.9607
94005000	L	4	1	1	1.769	2.474	1988	2	8.4	8.6291
94005000	L	4	1	1	1.769	2.474	1989	3	8.1	8.3217
94005000	L	4	1	1	1.769	2.474	1990	4	8.4	8.0283
94005000	L	4	1	1	1.769	2.474	1991	5	8.1	7.7387
94005000	L	4	1	1	1.769	2.474	1992	6	7.0	7.4427
94005000	L	4	1	1	1.769	2.474	1993	7	7.0	7.1301
94005000	L	4	1	1	1.769	2.474	1994	8	7.0	6.7907
94010000	L	4	1	7	0.337	0.875	1988	1	8.9	8.9510
94010000	L	4	1	1	0.337	0.875	1989	2	8.5	8.2814
94010000	L	4	1	1	0.337	0.875	1990	3	8.0	8.2730
94010000	L	4	1	1	0.337	0.875	1991	4	8.4	8.1926
94010000	L	4	1	1	0.337	0.875	1992	5	8.4	8.1120
94010000	L	4	1	1	0.337	0.875	1993	6	8.5	8.1030
94010000	L	4	1	1	0.337	0.875	1994	7	7.8	7.4324
94010000	R	4	1	1	10.599	12.743	1981	1	8.0	9.0723
94010000	R	4	1	1	10.599	12.743	1982	2	8.0	8.8856
94010000	R	4	1	1	10.599	12.743	1983	3	8.0	8.7737
94010000	R	4	1	1	10.599	12.743	1986	6	8.5	8.5988
94010000	R	4	1	1	10.599	12.743	1987	7	8.5	8.4981
94010000	R	4	1	1	10.599	12.743	1988	8	8.2	8.3282
94010000	R	4	1	1	10.599	12.743	1989	9	8.3	8.0603

Table B – Continued

RDWYID	RDWYSIDE	DISTRICT	SYSTEM	TYPE	BEG	END	YEAR	AGE	M. PCR	P. PCR
94010000	R	4	1	1	10.599	12.743	1990	10	7.5	7.6656
94030000	C	4	1	7	3.871	4.341	1987	1	7.4	8.1970
94030000	C	4	1	1	3.871	4.341	1988	2	7.8	8.1439
94030000	C	4	1	1	3.871	4.341	1989	3	7.6	8.1016
94030000	C	4	1	1	3.871	4.341	1990	4	8.0	8.0739
94030000	C	4	1	1	3.871	4.341	1991	5	8.0	8.0646
94030000	C	4	1	1	3.871	4.341	1992	6	7.5	7.7275
94030000	C	4	1	1	3.871	4.341	1993	7	7.5	6.9964
94030000	C	4	1	1	3.871	4.341	1994	8	5.5	5.7351
94050000	C	4	1	1	1.504	2.450	1981	1	9.0	8.8569
94050000	C	4	1	1	1.504	2.450	1982	2	8.6	8.6426
94050000	C	4	1	1	1.504	2.450	1983	3	8.2	8.4723
94050000	C	4	1	1	1.504	2.450	1986	6	8.4	8.1474
94050000	C	4	1	1	1.504	2.450	1992	12	7.6	7.6326
94050000	C	4	1	1	1.504	2.450	1993	13	7.5	7.4733
94050000	C	4	1	1	1.504	2.450	1994	14	7.5	7.2722

Note: M. PCR = Measured Pavement Condition Rating; P. PCR = Pavement Condition Rating from Fitted Curve.

APPENDIX C

SAS PROGRAMS APPLIED IN DATA MANIPULATION

LIST OF SAS PROGRAMS

	<u>Page</u>
Program PCSORT.SAS	187
Program WPASORT.SAS	188
Program SEGDEF.SAS	190
Program CYCLEDEF.SAS	193
Program BRKRKC.SAS	194
Program WPAPCY.SAS	201

PROGRAM PCSORT.SAS

```
*****
* program PCSORT.SAS
* written 3/3/96
* sort pavement condition survey data by RDWYID BEG YR
*****  
  
%let pcsyr=1976;  
  
data lib.pcsort;  
  set lib.pcsnew;  
  keep  
    rdwyid yr lanes district contydot system type beg end  
    cracks ride rutting pcr rdwyside;  
  if system='1';  
    if district='1';  
      if rdwyside='L';  
      where yr ge &pcsyrs;  
run;  
  
proc sort data=lib.pcsort;  
  by rdwyid beg yr;  
run;  
  
options pageno=1;  
  
proc print data=lib.pcsort;  
  title1 ' Pavement Condition Survey Data after Sorting by RDWYID  
         BEG YR';  
  title2 ' Input Data File PCSNEW.SD2';  
  title3 ' Output Data File PCSORT.SD2';  
run;
```

PROGRAM WPASORT.SAS

```
libname wpa 'c:\he\sas\wpa';
run;

data wpa.wpanew;
  set wpa.wpasv502;
  if wpwkmix in ('0002','0101','0120');
run;
proc print data=wpa.wpanew;
run;

data wpa.wparecon;
  set wpa.wpasv502;
  if wpwkmix in ('0004','0102','0121','0213','0217','0218',
                  '0219');
run;
proc print data=wpa.wparecon;
run;

data wpa.wparesuf;
  set wpa.wpasv502;
  if wpwkmix in ('0012','0210','0215','0220','0221','0222',
                  '0223','0224','0225','0226','0227');
run;
proc print data=wpa.wparesuf;
run;

data wpa.wpaother;
  set wpa.wpasv502;
  if wpwkmix ne '0012';
  if wpwkmix ne '0210';
  if wpwkmix ne '0215';
  if wpwkmix ne '0220';
  if wpwkmix ne '0221';
  if wpwkmix ne '0222';
  if wpwkmix ne '0223';
  if wpwkmix ne '0224';
  if wpwkmix ne '0225';
  if wpwkmix ne '0226';
  if wpwkmix ne '0227';
  if wpwkmix ne '0002';
  if wpwkmix ne '0101';
```

```
if wpwkmix ne '0120';
if wpwkmix ne '0004';
if wpwkmix ne '0102';
if wpwkmix ne '0121';
if wpwkmix ne '0213';
if wpwkmix ne '0217';
if wpwkmix ne '0218';
if wpwkmix ne '0219';

run;
proc print data=wpa.wpaother;
run;
```

PROGRAM SEGDEF.SAS

```
%include 'c:\helen\sas\macropgm\brktb.sas';
%include 'c:\helen\sas\macropgm\brkar.sas';
%include 'c:\helen\sas\macropgm\brkad.sas';

libname lib 'c:\he\sas\pcslib';
libname rsd1s1 'c:\helen\sas\rsd1s1';
run;

data pcseg;
  set rsd1s1.pcsresuf;
  %brktb(pcseg,pcstb)
  %brkar(pcstb,pcstar)
  %brkad(pcseg,pcstar)

proc sort data=pcseg;
  by rdwyid rdwyside beg yr;
data rsd1s1.pcseg;
  set pcseg;
  by rdwyid rdwyside beg yr;
  retain newyr newseq prevcrk crklyr crk7yr crk6yr pcr7yr pcr6yr
        prevpcr;
  if type='4' then cracks=defect;
  if first.beg then do;
    prevcrk=.;
    prevpcr=.;
    newyr=.;
    newseq=1;
    crklyr=.;
    crk7yr=.;
    crk6yr=.;
    pcr7yr=.;
    pcr6yr=.;
  end;

  if (type in ('7','8')) or
    (cracks=10 and prevcrk lt 9.0) then do;
    if (type='7') or
      (cracks=10 and prevcrk lt 9.0) then newyr=yr-1;
    else newyr=yr;
    crklyr=.;
    crk7yr=.;
```

```
crk6yr=.;  
pcr7yr=.;  
pcr6yr=.;  
if newseq>0 then newseq+1;  
end;  
  
if newyr ne . then age=yr-newyr;  
else age=.;  
  
if prevcrk=10 and 0 le cracks lt 10 then do;  
crk1yr=yr;  
end;  
  
if crk7yr=. and  
prevcrk>7.4 and 0 le cracks lt 7.5 then do;  
crk7yr=yr;  
end;  
  
if crk6yr=. and  
prevcrk>6.4 and 0 le cracks lt 6.5 then do;  
crk6yr=yr;  
end;  
  
if pcr7yr=. and  
prevpcr>7.4 and 0 le pcr lt 7.5 then do;  
pcr7yr=yr;  
end;  
  
if pcr6yr=. and  
prevpcr>6.4 and 0 le pcr lt 6.5 then do;  
pcr6yr=yr;  
end;  
  
if round ((end-beg),0.1) ge 0.5;  
prevcrk=cracks;  
prevpcr=pcr;  
run;  
  
proc sort data=rsdls1.pcseg;  
by rdwyid beg end rdwyside yr;  
  
run;
```

```
proc print data=rsd1s1.pcseg;  
by rdwyid beg end rdwyside yr;  
  
title1 'Pavement Condition Performance Data for Resurfacing  
Project in d1s1';  
title2 'Sections<0.5 mile excluded';  
title3 'Age based on pcs type or crack rating increasing to 10';  
run;  
  
quit;
```

PROGRAM CYCLEDEF.SAS

```
libname lib 'c:\he\sas\pcslib';
libname rsd1s1 'c:\helen\sas\rsd1s1';
run;

data rsd1s1.pcscycle;
  set rsd1s1.pcseg;
run;

proc sort data=rsd1s1.pcscycle;
  by rdwyid beg end rdwyside yr;
run;

data rsd1s1.pcscycle(drop=typeflag firstyr prevtype prevcrks);
  set rsd1s1.pcscycle;
  by rdwyid beg end rdwyside;
  retain typeflag cycle age1 firstyr prevtype prevcrks;
  if first.rdwyside then do;
    firstyr=yr;
    typeflag=1;
    end;
  else do;
    if (type=7 and prevtype ne 7) or(((cracks-prevcrks) ge 1.5)
      and (cracks>=8.5)) then do;
      firstyr=yr;
      typeflag=typeflag+1;
      end;
    end;
  end;

  if cracks ne . then prevcrks=cracks;
  if first.rdwyside and cracks eq . then prevcrks=.;
  prevtype=type;
  cycle=typeflag;
  age1=yr-firstyr+1;
run;

title;
title "pcs data with cycles defined for Resurfacing Project";

proc print data=rsd1s1.pcscycle;
run;
```

PROGRAM BRKRLC.SAS

```
*****
* BRKRLC
*
* SAS MACRO TO COMBINE TWO DATA SETS BY RDWYID RDWYSIDE BEG,
* BY CREATING NEW RECORDS WITH COMMON MILEPOST BREAKS BASED
* ON RDWYSIDE. Composite rdwysides are remain composite when
* no right or left individual rdwyside match is made. Multiple
* observations per roadway segment can be handled in dataset 2.
* If multiple observations per roadway segment occur in dataset 1,
* all records may not be matched up or output for dataset 1.
*
* WRITTEN BY BRUCE DIETRICH 8/19/91
* modified 7/2/92 brks not separated by rdwyside, x values added,
* global dim statement added.
* modified 7/6/92 x values removed, cflag merge added.
* modified 3/22/93 data set 2 sequence numbers added to allow
* multiple values per milepost in 2nd data set.
* It is assumed that the 1st data set has unique
* records per rdwyid-rdwyside-beg. If not, later
* obs will be dropped. Upcase function applied to
* rdwyside comparisons, incase lowercase rdwyside
* is used in feat data sets.
* modified 3/24/93 rdwyside converted to upcase initially.
* modified 3/26/93 cflag processing changed to handle cases where
* rdwyside changes in dsn2 without beg change.
* modified 4/30/93 input data set names changed to avoid changes
* to their structure. featds1 and featds2 vars
* will be kept in the output dataset with the
* original rdwyside values for their respective
* input data sets.
*
* COMPOSITE RDWYSIDE RECORDS ARE OUTPUT TO R AND L RECORDS,
* MILEPOST RECORDS CREATED, DATA SETS MERGED.
* A composite flag file is created during the merge to identify
* sections that were composite in one file but only on one roadway
* in the other file so that the other roadway is not converted
* back to composite.
* The flag file is merged back in by rdwyid beg dsn2seq.
* IF BOTH MERGED RECORDS
* WERE ORIGINALLY COMPOSITE OR ONLY A COMPOSITE RECORD
* INFORMATION, THEN THE RDWYSIDE IS CONVERTED BACK TO
```

```

* COMPOSITE AND ONLY ONE RECORD OUTPUT. If one file is composite and the
* other file is missing for both sides, the first file is
* converted back to composite.
*
*****  

* outDS IS FEATURE DATA SET to be output.
* FEATDS1,featds2 are FEATURE DATA SETs WITH RDWYID, BEG, END.
* rLTBL IS DATA SET WITH RDWYID, BRK FOR ALL MILEPOST BREAKS
*****  

;  

options symbolgen macrogen mlogic mprint;
%MACRO BRKRLC(outds, FEATDS1, FEATDS2);  

data featds1;
set &featds1;
data featds2;
set &featds2;
dsn2seq=_n_;
run;  

%MACRO BRKRL(FEATDS,RLTBL);
DATA &FEATDS;
SET &FEATDS;
rdwyside=upcase(rdwyside);
IF RDWYSIDE='C' THEN DO;
&FEATDS='C';
RDWYSIDE='R';
OUTPUT;
RDWYSIDE='L';
OUTPUT;
END; /* C */
ELSE
IF RDWYSIDE ='R' THEN DO;
&FEATDS='R';
OUTPUT;
END; /* R */
ELSE
IF RDWYSIDE ='L' THEN DO;
&FEATDS='L';
OUTPUT;
END; /* L */  

PROC SORT DATA=&FEATDS;

```

```

BY RDWYID RDWYSIDE;
*****
* BUILD TABLE OF ALL BREAKS
*****
;

DATA &RLTBL(KEEP=RDWYID BRK);
SET &FEATDS;
BY RDWYID;
BRK=BEG;
OUTPUT;
BRK=END;
OUTPUT;
%MEND BrkRL;

%BRKRL(FEATDS1,RLTBL1)
%BRKRL(FEATDS2,RLTBL2)
DATA BOTHTBL;
SET RLTBL1 RLTBL2;
*****
* MACRO TO OUTPUT ONE RECORD PER RDWYID WITH ALL BREAKS AS
ARRAY
*
* BRKSTBLE IS DATA SET WITH RDWYID, BRK
* BRKSARR IS DATA SET WITH RDWYID AND ARRAY OF BREAKS BRK1-
BRKMAXDIM
*****
;

%MACRO RLARR(RLTBL,RLARR);
*****
* ELIMINATE IDENTICAL BREAKS
*****
;

PROC SORT DATA=&RLTBL;
BY RDWYID BRK;
DATA &RLTBL;
SET &RLTBL;
BY RDWYID BRK;
IF LAST.BRK AND BRK NE 0.0;
*****
* DETERMINE MAX NUMBER OF BREAKS
*****
;

PROC FREQ DATA=&RLTBL;

```

```

TABLES RDWYID/ OUT=NUMBRKS NOPRINT;
PROC MEANS DATA=NUMBRKS NOPRINT;
VAR COUNT;
OUTPUT OUT=MAXBRK MAX=MAXDIM;
DATA _NULL_;
SET MAXBRK;
%global DIM;
CALL SYMPUT('DIM',LEFT(MAXDIM));
RUN;
*****
* OUTPUT TO ONE RECORD PER RDWYID
*****
;

DATA &RLARR;
SET &RLTBL;
BY RDWYID BRK;
ARRAY BRKS(&DIM) BRK1-BRK&DIM;
RETAIN BRK1-BRK&DIM;
IF FIRST.RDWYid THEN I=1;
BRKS(I)=BRK;
IF LAST.RDWYID THEN DO;
NBRKS=I;
OUTPUT;
END;
I+1;
%MEND RLARR;

%RLARR(BOTHtbl,BOTHarr)

*****
* MACRO TO ADD BREAKS TO FEATURE DATA SET
*****
*
* FEATDS IS DATA SET CONTAINING FEATURE INFO WITH RDWYID,
RDWYSIDE
* AND BEG AND END.
* RLARR IS DATA SET CONTAINING ALL BREAKS PER RDWYID, RDWYSIDE
ON
* SEPARATE OBSERVATIONS.
* MACRO CREATES NEW OBSERVATIONS IN FEATDS FOR EACH BREAK IN
THE
* ARRAY FOR THAT ROADWAY ID AND RDWYSIDE.
*****

```

```

;
%MACRO RLADD(featDS,RLARR);
***** * MERGE WITH FEAT DATA SET AND OUTPUT PER BREAK *****
*****;

PROC SORT DATA=&FEATDS;
BY RDWYID;
PROC SORT DATA=&RLARR;
BY RDWYID;
DATA &FEATDS(DROP= I BRK1-BRK&DIM BEGX ENDX NBRKS BRK);
MERGE &FEATDS &RLARR;
BY RDWYID;
ARRAY BRKS(&DIM) BRK1-BRK&DIM;
BEGX=BEG;
ENDX=END;
IF END NE 0.0 THEN
DO I = 1 TO NBRKS WHILE (BRKS(I) LE ENDX);
IF BEGX LT BRKS(I) LE ENDX THEN DO;
BEG=BEGX;
END=BRKS(I);
OUTPUT;
BEGX=BRKS(I);
END; /* BEGX LT BRK LE ENDX */
END; /* DO I=1 TO NBRKS */
ELSE OUTPUT;

%MEND RLADD;

%RLADD(FEATDS1,BOTHARR)
%RLADD(FEATDS2,BOTHARR)

***** * SORT, MERGE, build cflag file *
* note: cflag=C indicates that rdwyside should be converted back
*       to C after merge. Pflag is used to indicate that left
*       roadway was missing in either dataset observation. Left
*       roadway is checked prior to right. When right roadway
*       is checked, pflag value helps determine if cflag should
*       be set for that rdwyid beg dsn2seq combination.
*
* Example: For a particular milepost (beg) and dataset two

```

```

*      observation, if only left roadway obs exists in one
*      dataset, and a composite record exists in the other
*      dataset, then the right side record should not be converted
*      back to composite.
*
*****;
PROC SORT DATA=FEATDS1;
BY RDWYID beg RDWYSIDE;

PROC SORT DATA=FEATDS2;
BY RDWYID beg RDWYSIDE;

DATA &outDS(drop=cflag pflag val2)
cflag(keep=rdwyid beg dsn2seq cflag pflag);
MERGE FEATDS1(IN=ONE) FEATDS2(IN=TWO);
BY RDWYID beg RDWYSIDE;
cflag="";
if first.beg or dsn2seq ne val2 then do;
  pflag="";
end; /* first.beg or dsn2seq changes */
retain pflag val2;
/* both composite set flag */
IF FEATDS1='C' AND FEATDS2='C' then cflag='C';
else do;
/* not both composite */
/* prior L rdwy, one composite, one missing, set pflag */
/* note: left roadway sorts before right */
  IF rdwyside='L' then do;
    if ((FEATDS1='C' AND FEATDS2 = "") or
        (FEATDS2='C' AND FEATDS1 = "")) then pflag='P';
  end; /* rdwyside=L */
  else
    IF rdwyside ='R' then do;
      /* one composite, one missing, pflag set from prior left obs*/
      /* then set cflag */
      if ((FEATDS1='C' AND FEATDS2 = "") or
          (FEATDS2='C' AND FEATDS1 = "")) and pflag='P' then cflag='C';
    end; /* rdwyside=R */
  end; /* not both composite */
if last.beg or (dsn2seq ne val2 and not first.beg)
  then output cflag;
OUTPUT &outds;

```

```
val2=dsn2seq;
*****
* MERGE outds with cflag file
*****
;

PROC SORT DATA=&outds;
BY RDWYID beg dsn2seq;

PROC SORT DATA=cflag;
BY RDWYID beg dsn2seq;

DATA &outDS(DROP=cflag pflag);
merge &outds cflag;
BY RDWYID beg dsn2seq;
if cflag='C' then rdwyside='C';

PROC SORT DATA=&outds;
BY RDWYID beg rdwyside dsn2seq;

DATA &outDS(DROP=dsn2seq);
set &outds;
BY RDWYID beg rdwyside dsn2seq;
if first.dsn2seq;
run;
%mend brkrlc;
```

PROGRAM WPAPCSY.SAS

```
*****
* wpapcsy1
*
* written 11/9/94
* rewritten 8/15/95
* modified 12/15/95 rdwyid table from wpa merge with pcs added to
*      reduce processing time. rdsectty, prdsctty
*      added.
*      rsf5 category added.
*
* sas program to extract new,recon,rsf projects from WPA for a
* selected fiscal year
* and combine with PCS ratings.
*
*****
;
*****
* Assign macro variables for desired wpa yr and 1st pcs year
*****
;
libname wpa 'c:\he\sas\wpa';
libname lib 'c:\he\sas\pcslib';
libname rsd1s1 'c:\helen\sas\rsd1s1';
run;
%let wpayr=1976;
%let pcsyr=1976;
*****
* Read WPA info from the WPASV502 database
*****
;
data wpa(rename=(begsecpt=beg endsecpt=end));
set wpa.wparesuf;
keep
  WPITEMNO localnam wpwkmix contydot bEGSECPT ENDSECPT
  projlghx exlnimpr NEWLNADD rdwyid rdwyside rdsectty
  prdsctty district wpphase fiscalyr pgmno maxcontr extrdate;
WHERE
RDWYID NE ''
and ENDSECPT NE 0
```

```

and BEGSECPT NE . AND ENDSECPT NE .
and fiscalyr eq "&wpayr";
wpabeg=begsecpt;
wpaend=endsecpt;
run;
*****
* build table of rdwyid's from wpa to reduce pcs data set size.
*****
;

data wpardid;
set wpa;
keep rdwyid;
proc sort data=wpardid;
by rdwyid;
data wpardid;
set wpardid;
by rdwyid;
if last.rdwqid;
*****  

* extract pcs data
*****  

;  

DATA pcs
(KEEP=DISTRICT CONTYDOT RDWYID RDWYSIDE BEG END lanes
 ride pcr rutting cracks defect type system yr);
SET lib.pcsd1s1;
if type='4' then cracks=defect;  

where yr ge &pcsyrs;
run;
*****
* merge with rdwyid table from wpa and only keep wpa rdwyid's
*****  

;  

proc sort data=pcs;
by rdwyid;
proc sort data=wpardid;
by rdwyid;
data pcs;
merge pcs(in=p) wpardid(in=w);
by rdwyid;
if p and w;

```

```

*****
* Combine pcs and wpa using brkrlc macro
* WPA placed first in macro to get multiple pcs values matched.
*****
;

%brkrlc(wpapcs,wpa,pcs);
*****
* limit data set to project sections
* over 0.25 length
*****
;

data rsd1s1.wpapcs;
set wpapcs;
where wpitemno ne "";
if (end-beg) ge 0.25;

*****
* sort by pcs year and check for pavement improvement
*****
;

proc sort data=rsd1s1.wpapcs;
by rdwyid rdwyside beg yr;

data rsd1s1.pcsresuf;
set rsd1s1.wpapcs(keep=rdwyid rdwyside wpitemno wpwkmix district
contydo type system beg end yr pcr cracks
rutting ride localnam);
proc print data=rsd1s1.pcsresuf;
var rdwyid rdwyside wpitemno wpwkmix district contydot
type system beg end yr pcr cracks rutting ride localnam;

title1 'PCS Combined with WPA for Resurface Project in D1s1';
title2 'wpa=1976 pcs=1976';
options pageno=1;

run;
quit;

```

APPENDIX D

MODEL EVALUATION FROM SAS OUTPUT

Table D.1 Comparison Between PCR from Regression Equation and Measured PCR Primary System Resurfacing Project for Group I

General Linear Models Procedure

Number of observations in data set = 569

Dependent Variable: PPCR

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	1280.93054338	1280.93054338	4922.43	0.0001
Error	567	147.54659707	0.26022328		
Corrected Total	568	1428.47714045			
R-Square		C.V.	Root MSE	PPCR Mean	
		0.896711	7.330145	0.51012084	6.95921880
Source	DF	Type I SS	Mean Square	F Value	Pr > F
MPCR	1	1280.93054338	1280.93054338	4922.43	0.0001
Source	DF	Type III SS	Mean Square	F Value	Pr > F
MPCR	1	1280.93054338	1280.93054338	4922.43	0.0001
Parameter	Estimate	T for H0: Parameter=0	Pr > T	Std Error of Estimate	
INTERCEPT	0.6516893869	7.05	0.0001	0.09241056	
MPCR	0.9099275109	70.16	0.0001	0.01292656	

Table D.2 Comparison Between PCR from Regression Equation and Measured PCR Interstate System Resurfacing Project for Group I

General Linear Models Procedure

Number of observations in data set = 131

Dependent Variable: PPCR

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	325.24155774	325.24155774	1268.77	0.0001
Error	129	33.06833003	0.25634364		
Corrected Total	130	358.30988776			
R-Square		C.V.	Root MSE	PPCR Mean	
			0.50630390	7.17485496	
Source	DF	Type I SS	Mean Square	F Value	Pr > F
MPCR	1	325.24155774	325.24155774	1268.77	0.0001
Source	DF	Type III SS	Mean Square	F Value	Pr > F
MPCR	1	325.24155774	325.24155774	1268.77	0.0001
Parameter	Estimate	T for H0: Parameter=0	Pr > T	Std Error of Estimate	
INTERCEPT	0.7303954951	3.92	0.0001	0.18625279	
MPCR	0.9007940569	35.62	0.0001	0.02528912	

Table D.3 Comparison Between PCR from Regression Equation and Measured PCR Reconstruction Project for Group I

General Linear Models Procedure

Number of observations in data set = 134

Dependent Variable: PPCR						
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F	
Model	1	348.66517176	348.66517176	1852.12	0.0001	
Error	132	24.84923636	0.18825179			
Corrected Total	133	373.51440811				
R-Square		C.V.		Root MSE		PPCR Mean
				0.43387993		6.96722836
Source	DF	Type I SS	Mean Square	F Value	Pr > F	
PCR	1	348.66517176	348.66517176	1852.12	0.0001	
Source	DF	Type III SS	Mean Square	F Value	Pr > F	
PCR	1	348.66517176	348.66517176	1852.12	0.0001	
Parameter	Estimate	T for H0: Parameter=0	Pr > T	Std Error of Estimate		
INTERCEPT	0.6499290657	4.29	0.0001	0.15149981		
PCR	0.9068217517	43.04	0.0001	0.02107110		

**Table D.4 Comparison Between PCR from Regression Equation and Measured PCR
New Construction Project for Group I**

General Linear Models Procedure

Number of observations in data set = 38

Dependent Variable: PPCR

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	146.48726476	146.48726476	251.88	0.0001
Error	36	20.93667821	0.58157439		
Corrected Total	37	167.42394297			
R-Square		C.V.	Root MSE	PPCR Mean	
			0.76261025	6.67953421	
Source	DF	Type I SS	Mean Square	F Value	Pr > F
MPCR	1	146.48726476	146.48726476	251.88	0.0001
Source	DF	Type III SS	Mean Square	F Value	Pr > F
MPCR	1	146.48726476	146.48726476	251.88	0.0001
Parameter	Estimate	T for H0: Parameter=0	Pr > T	Std Error of Estimate	
INTERCEPT	1.357013647	3.80	0.0005	0.35745695	
MPCR	0.803878305	15.87	0.0001	0.05065158	

Table D.5 Comparison Between PCR from Regression Equation and Measured PCR Primary System Resurfacing Project for Group II

General Linear Models Procedure

Number of observations in data set = 197

Dependent Variable: PPCR

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	69.83444966	69.83444966	835.70	0.0001
Error	195	16.29507919	0.08356451		
Corrected Total	196	86.12952885			
R-Square		C.V.	Root MSE	PPCR Mean	
			0.28907526	7.89513909	
Source	DF	Type I SS	Mean Square	F Value	Pr > F
MPCR	1	69.83444966	69.83444966	835.70	0.0001
Source	DF	Type III SS	Mean Square	F Value	Pr > F
MPCR	1	69.83444966	69.83444966	835.70	0.0001
Parameter	Estimate	T for H0: Parameter=0	Pr > T	Std Error of Estimate	
INTERCEPT	0.9976528161	4.17	0.0001	0.23948533	
MPCR	0.8728191131	28.91	0.0001	0.03019259	

Table D.6 Comparison Between PCR from Regression Equation and Measured PCR Interstate System Resurfacing Project for Group II

General Linear Models Procedure

Number of observations in data set = 120

Dependent Variable: PCR						
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F	
Model	1	26.94885840	26.94885840	252.15	0.0001	
Error	118	12.61141279	0.10687636			
Corrected Total	119	39.56027119				
R-Square			C.V.			PPCR Mean
						8.09246083
Source	DF	Type I SS	Mean Square	F Value	Pr > F	
MPCR	1	26.94885840	26.94885840	252.15	0.0001	
Source	DF	Type III SS	Mean Square	F Value	Pr > F	
MPCR	1	26.94885840	26.94885840	252.15	0.0001	
Parameter	Estimate	T for H0: Parameter=0	Pr > T			Std Error of Estimate
INTERCEPT	1.970470716	5.10	0.0001			0.38668789
MPCR	0.756190236	15.88	0.0001			0.04762135

Table D.7 Comparison Between PCR from Regression Equation and Measured PCR Reconstruction project for Group II

General Linear Models Procedure

Number of observations in data set = 44

Dependent Variable: PPCR						
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F	
Model	1	29.47261358	29.47261358	273.98	0.0001	
Error	42	4.51804763	0.10757256			
Corrected Total	43	33.99066121				
R-Square		C.V.	Root MSE			PPCR Mean
			4.116128	0.32798256	7.966822955	
Source	DF	Type I SS	Mean Square	F Value	Pr > F	
MPCR	1	29.47261358	29.47261358	273.98	0.0001	
Source	DF	Type III SS	Mean Square	F Value	Pr > F	
MPCR	1	29.47261358	29.47261358	273.98	0.0001	
Parameter	Estimate	T for H0: Parameter=0	Pr > T	Std Error of Estimate		
INTERCEPT	1.035814795	2.46	0.0183	0.42172723		
MPCR	0.878278863	16.55	0.0001	0.05306081		

**Table D.8 Comparison Between PCR from Regression Equation and Measured PCR
New Construction Project for Group II**

General Linear Models Procedure

Number of observations in data set = 61

Dependent Variable: PPCR						
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F	
Model	1	15.70597919	15.70597919	637.18	0.0001	
Error	59	1.45429901	0.02464914			
Corrected Total	60	17.16027820				
		R-Square	C.V.	Root MSE	PPCR	Mean
		0.915252	1.886262	0.15700043	8.32336393	
Source	DF	Type I SS	Mean Square	F Value	Pr > F	
MPCR	1	15.70597919	15.70597919	637.18	0.0001	
Source	DF	Type III SS	Mean Square	F Value	Pr > F	
MPCR	1	15.70597919	15.70597919	637.18	0.0001	
Parameter	Estimate	T for H0: Parameter=0	Pr > T	Std Error of Estimate		
INTERCEPT	0.6978188581	2.30	0.0247	0.30276008		
MPCR	0.9151254174	25.24	0.0001	0.03625342		

Table D.9 Comparison Between PCR from Regression Equation and Measured PCR Primary System Resurfacing Project for Group III

General Linear Models Procedure

Number of observations in data set = 875

Dependent Variable: PPCR						
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F	
Model 1	1	167.73567294	167.73567294	2035.42	0.0001	
Error	873	71.94250194	0.08240836			
Corrected Total	874	239.67817488				
	R-Square	C.V.	Root MSE	PPCR Mean		
	0.699837	3.550109	0.28706857	8.08619110		
Source	DF	Type I SS	Mean Square	F Value	Pr > F	
MPCR	1	167.73567294	167.73567294	2035.42	0.0001	
Source	DF	Type III SS	Mean Square	F Value	Pr > F	
MPCR	1	167.73567294	167.73567294	2035.42	0.0001	
Parameter	Estimate	T for H0: Parameter=0	Pr > T	Std Error of Estimate		
INTERCEPT	1.696715734	11.95	0.0001	0.14195653		
MPCR	0.792918768	45.12	0.0001	0.01757525		

Table D.10 Comparison Between PCR from Regression Equation and Measured PCR Interstate System Resurfacing Project for Group III

General Linear Models Procedure

Number of observations in data set = 187

Dependent Variable: PPCR

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	36.64612031	36.64612031	433.44	0.0001
Error	185	15.64115338	0.08454678		
Corrected Total	186	52.28727369			
R-Square		C.V.		Root MSE	PPCR Mean
				0.29076928	8.344202674
Source	DF	Type I SS	Mean Square	F Value	Pr > F
MPCR	1	36.64612031	36.64612031	433.44	0.0001
Source	DF	Type III SS	Mean Square	F Value	Pr > F
MPCR	1	36.64612031	36.64612031	433.44	0.0001
Parameter	Estimate	T for H0: Parameter=0	Pr > T	Std Error of Estimate	
INTERCEPT	2.186394058	7.38	0.0001	0.29643356	
MPCR	0.742024954	20.82	0.0001	0.03564126	

Table D.11 Comparison Between PCR from Regression Equation and Measured PCR Reconstruction project for Group III

General Linear Models Procedure

Number of observations in data set = 156

Dependent Variable: PPCR					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	40.28128188	40.28128188	1038.27	0.0001
Error	154	5.97467393	0.03879658		
Corrected Total	155	46.25595580			
R-Square		C.V.		Root MSE	PPCR Mean
				0.19606848	8.09196282
Source	DF	Type I SS	Mean Square	F Value	Pr > F
PCR	1	40.28128188	40.28128188	1038.27	0.0001
Source	DF	Type III SS	Mean Square	F Value	Pr > F
PCR	1	40.28128188	40.28128188	1038.27	0.0001
Parameter	Estimate	T for H0: Parameter=0	T	Std Error of Estimate	
INTERCEPT	0.7884859495	3.47	0.0007	0.22720788	
PCR	0.9017557995	32.22	0.0001	0.02798556	

**Table D.12 Comparison Between PCR from Regression Equation and Measured PCR
New Construction project for Group III**

General Linear Models Procedure

Number of observations in data set = 77

Dependent Variable: PPCR						
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F	
Model	1	11.37148495	11.37148495	216.89	0.0001	
Error	75	3.93227995	0.05243040			
Corrected Total	76	15.30376490				
R-Square		C.V.				
		2.806805	0.22897685	8.15791948		
Source	DF	Type I SS	Mean Square	F Value	Pr > F	
MPCR	1	11.37148495	11.37148495	216.89	0.0001	
Source	DF	Type III SS	Mean Square	F Value	Pr > F	
MPCR	1	11.37148495	11.37148495	216.89	0.0001	
Parameter	Estimate	T for H0: Parameter=0	Pr > T	Std Error of Estimate		
INTERCEPT	2.233609548	5.54	0.0001	0.40311633		
MPCR	0.727430816	14.73	0.0001	0.04939406		

**Table D.13 Comparison Between PCR from Regression Equation and Measured PCR
For 1994 data points only, Group III**

General Linear Models Procedure

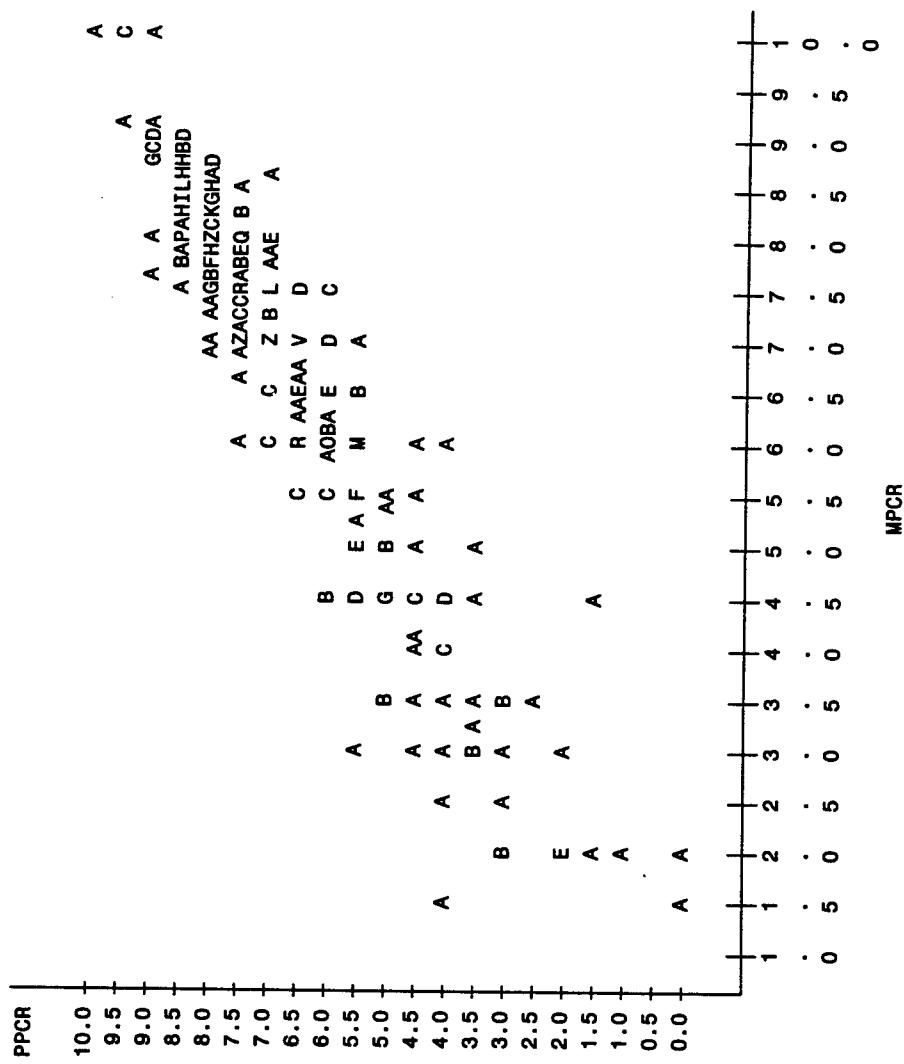
Number of observations in data set = 150

Dependent Variable: PPCR

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	44.11526198	44.11526198	383.23	0.0001
Error	148	17.03676706	0.11511329		
Corrected Total	149	61.15202905			
R-Square		C.V.	Root MSE	PPCR Mean	
0.721403		4.651775	0.33928350	7.29363520	
Source	DF	Type I SS	Mean Square	F Value	Pr > F
PCR	1	44.11526198	44.11526198	383.23	0.0001
Source	DF	Type III SS	Mean Square	F Value	Pr > F
PCR	1	44.11526198	44.11526198	383.23	0.0001
Parameter		T for H0: Parameter=0	Pr > T	Std Error of Estimate	
INTERCEPT		0.9392260070	2.88	0.0045	0.32577621
PCR		0.8442527714	19.58	0.0001	0.04312616

**Figure D.1 Comparison Between PCR from Regression Equation and Measured PCR
Primary System Resurfacing Project for Group I**

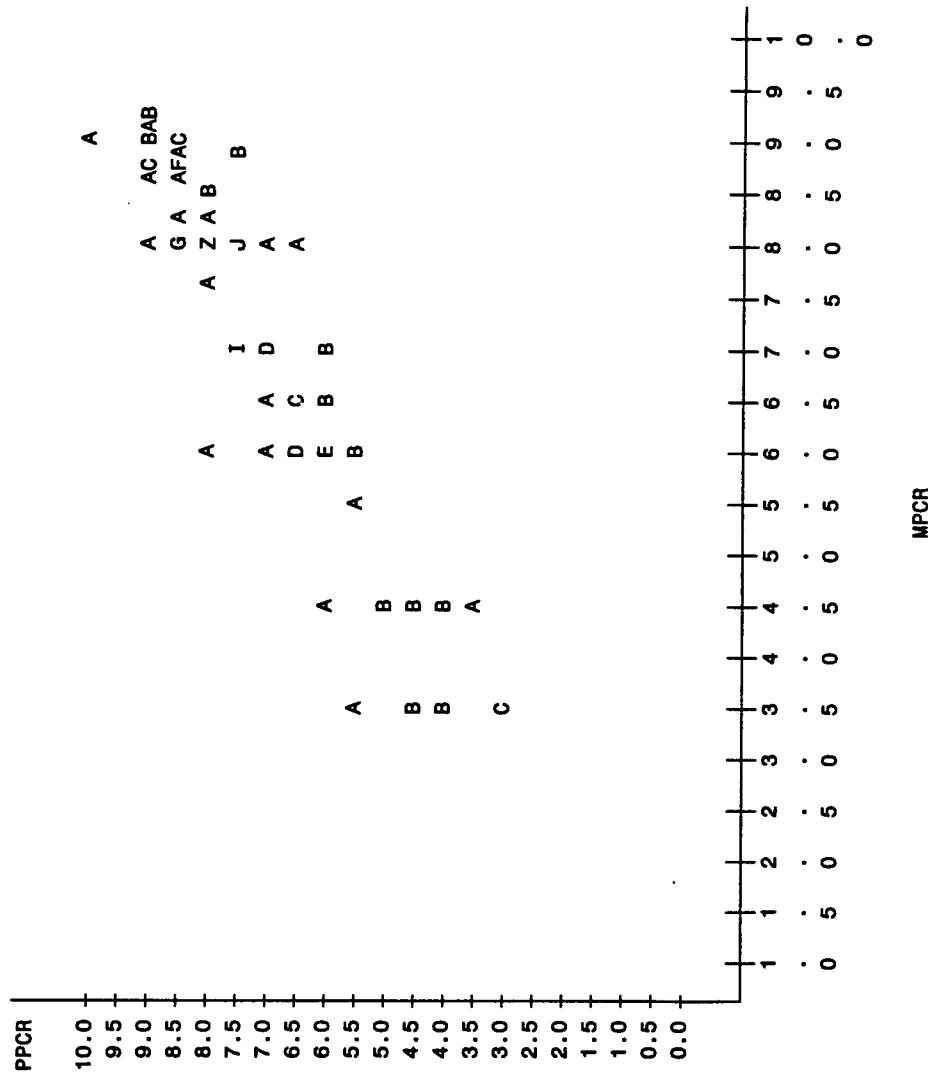
Plot of PPCR*MPCR. Legend: A = 1 obs, B = 2 obs, etc.



NOTE: 62 obs hidden. 5 obs out of range.

Figure D.2 Comparison Between PCR from Regression Equation and Measured PCR Interstate System Resurfacing Project for Group I

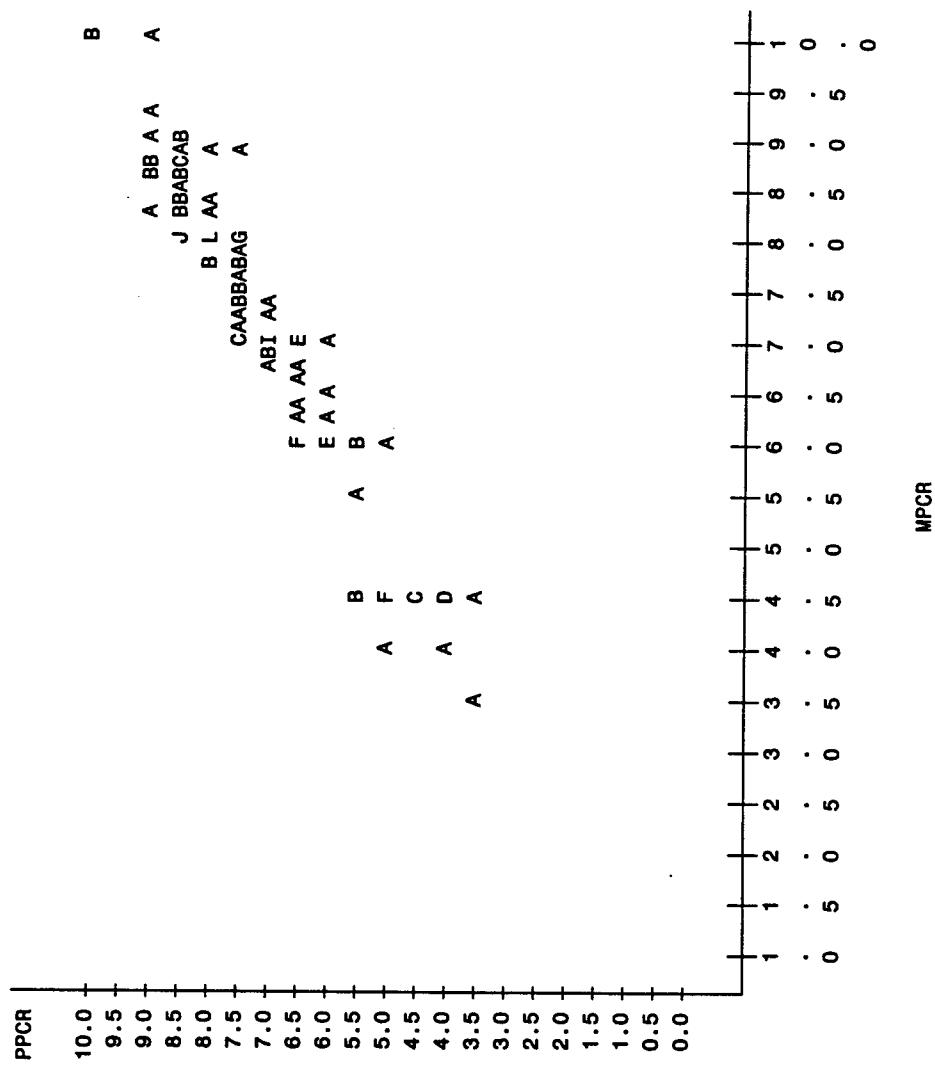
Plot of PCR*WPCR. Legend: A = 1 obs, B = 2 obs, etc.



NOTE: 4 obs hidden. 2 obs out of range.

Figure D.3 Comparison Between PCR from Regression Equation and Measured PCR Reconstruction Project for Group I

Plot of PPCR*MPCR. Legend: A = 1 obs, B = 2 obs, etc.



NOTE: 3 obs out of range.

Figure D.4 Comparison Between PCR from Regression Equation and Measured PCR
New Construction Project for Group I

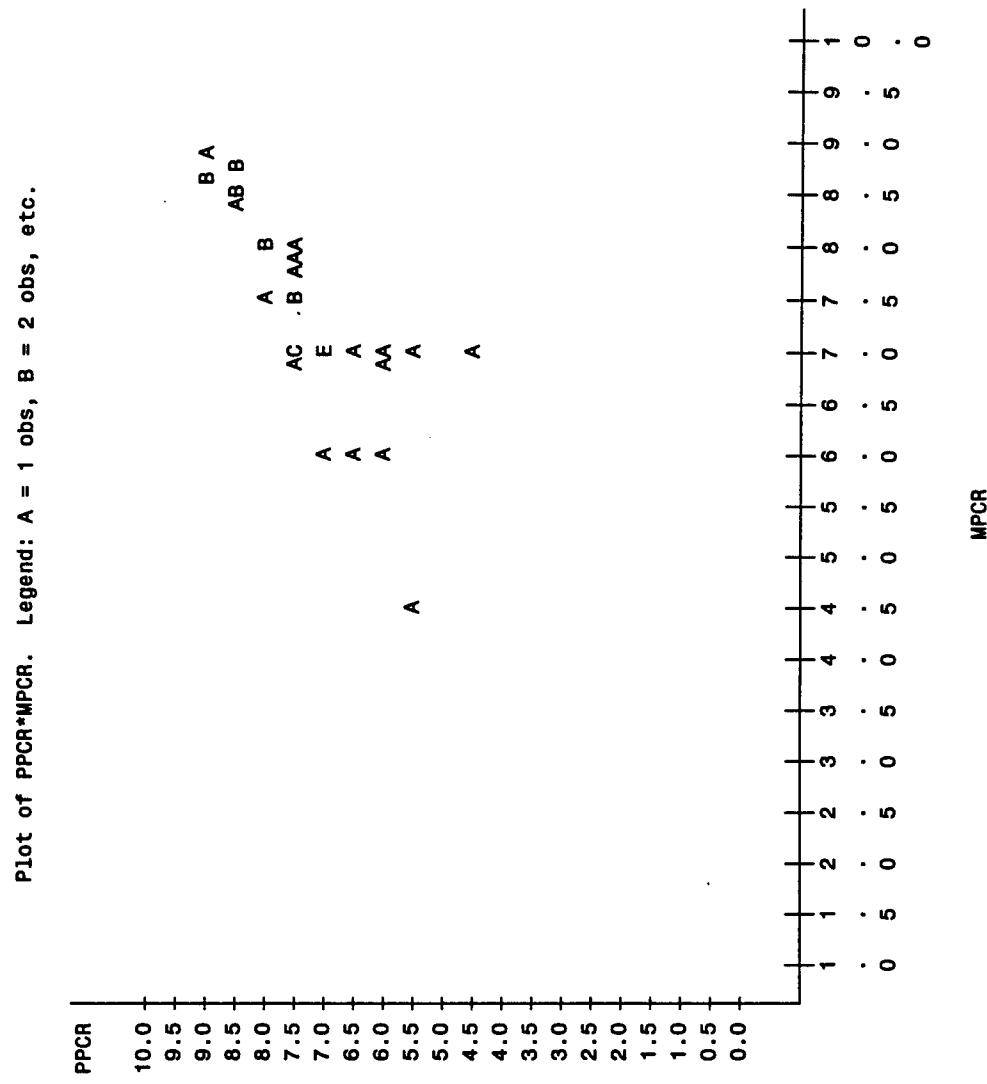
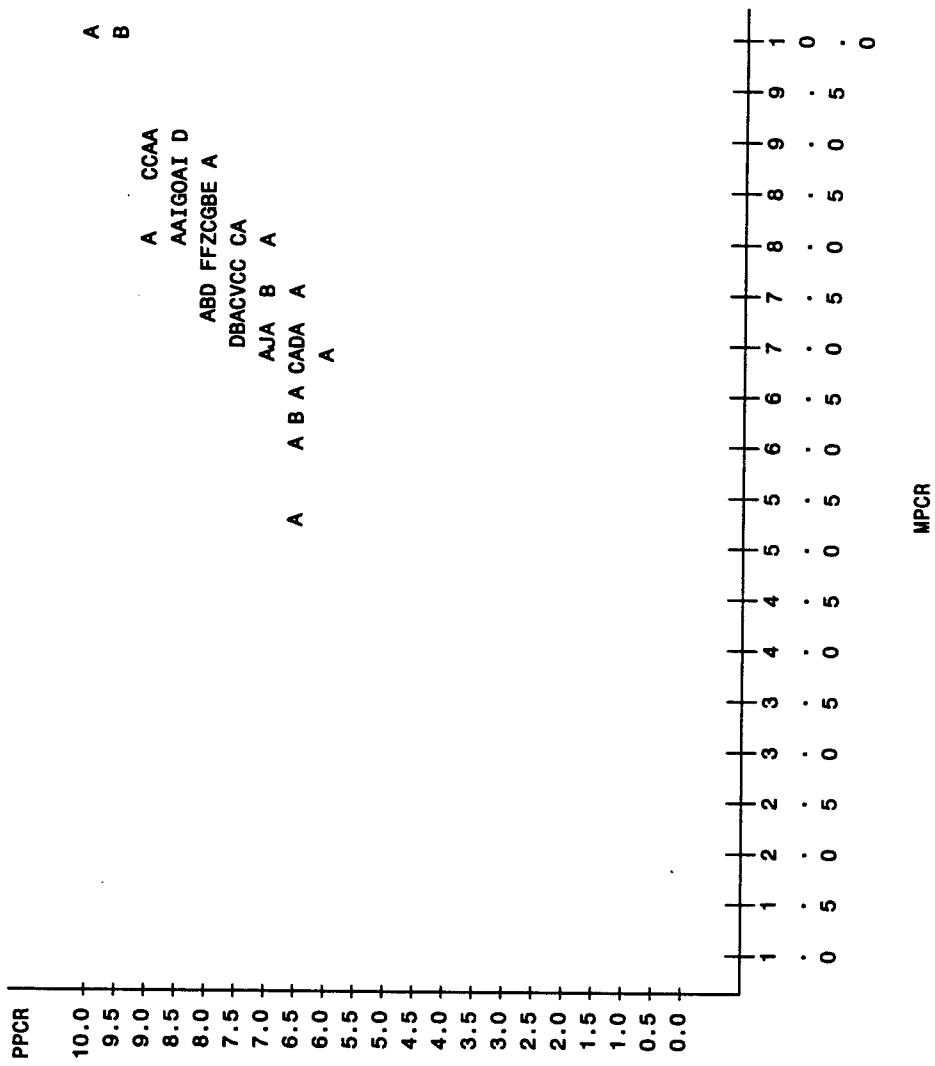


Figure D.5 Comparison Between PCR from Regression Equation and Measured PCR Primary System Resurfacing Project for Group II

Plot of PPCR*MPCR. Legend: A = 1 obs, B = 2 obs, etc.



NOTE: 2 obs hidden.

**Figure D.6 Comparison Between PCR from Regression Equation and Measured PCR
Interstate System Resurfacing Project for Group II**

Plot of PPCR*MPCR. Legend: A = 1 obs, B = 2 obs, etc.

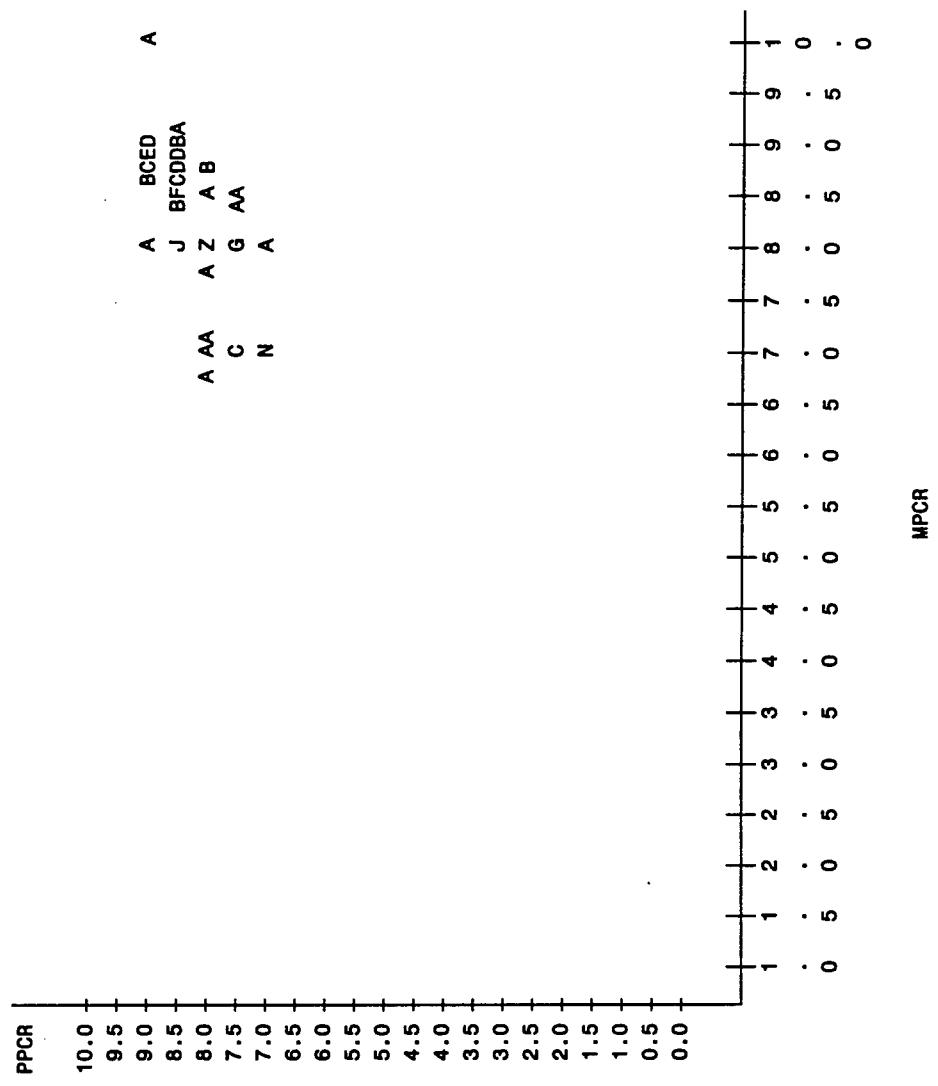


Figure D.7 Comparison Between PCR from Regression Equation and Measured PCR Reconstruction project for Group II

Plot of PPCR*MPCR. Legend: A = 1 obs, B = 2 obs, etc.

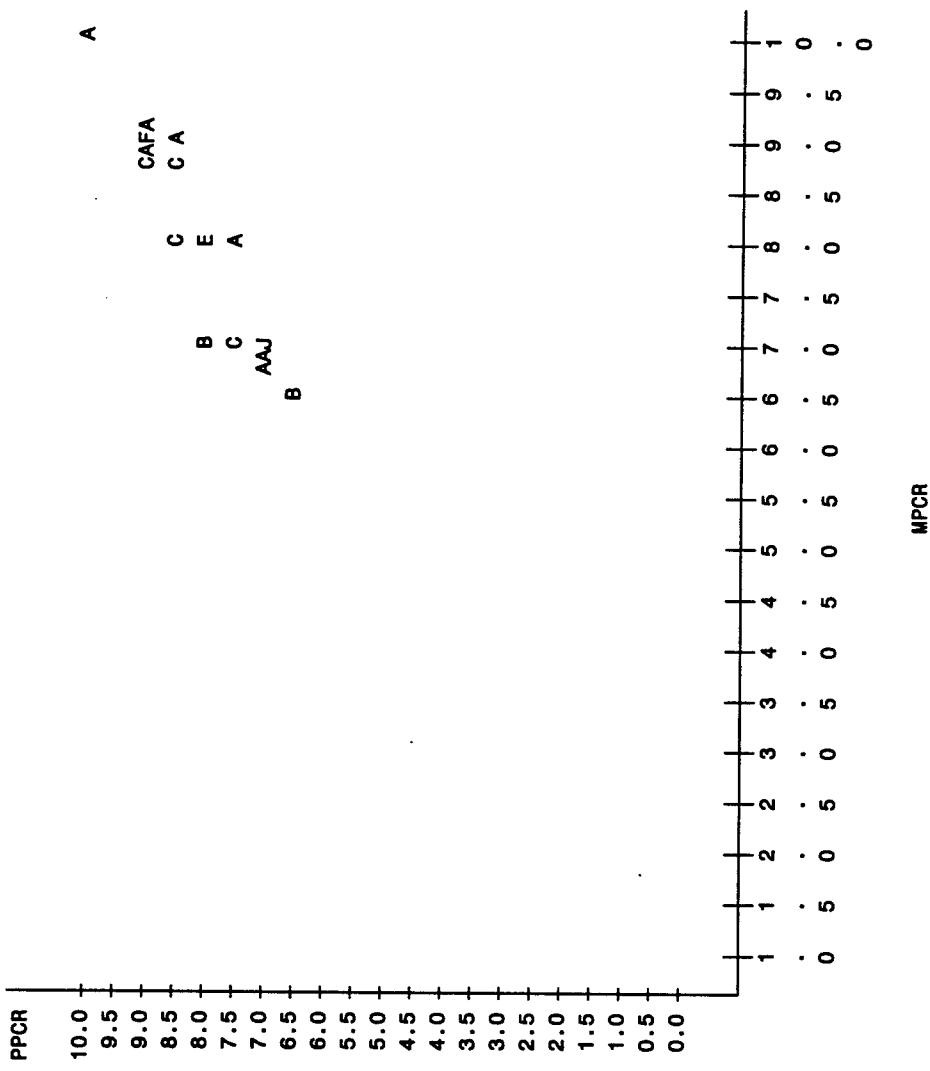


Figure D.8 Comparison Between PCR from Regression Equation and Measured PCR
New Construction Project for Group II

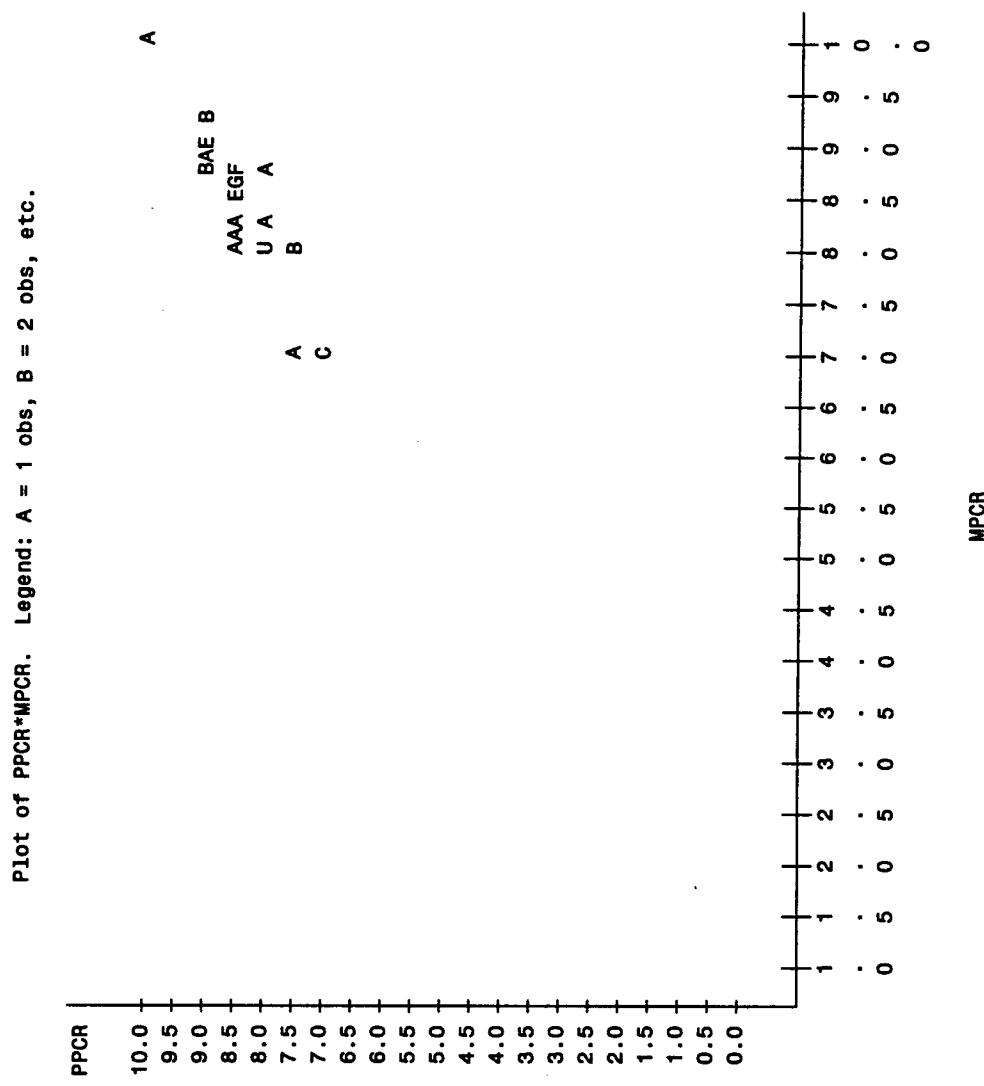
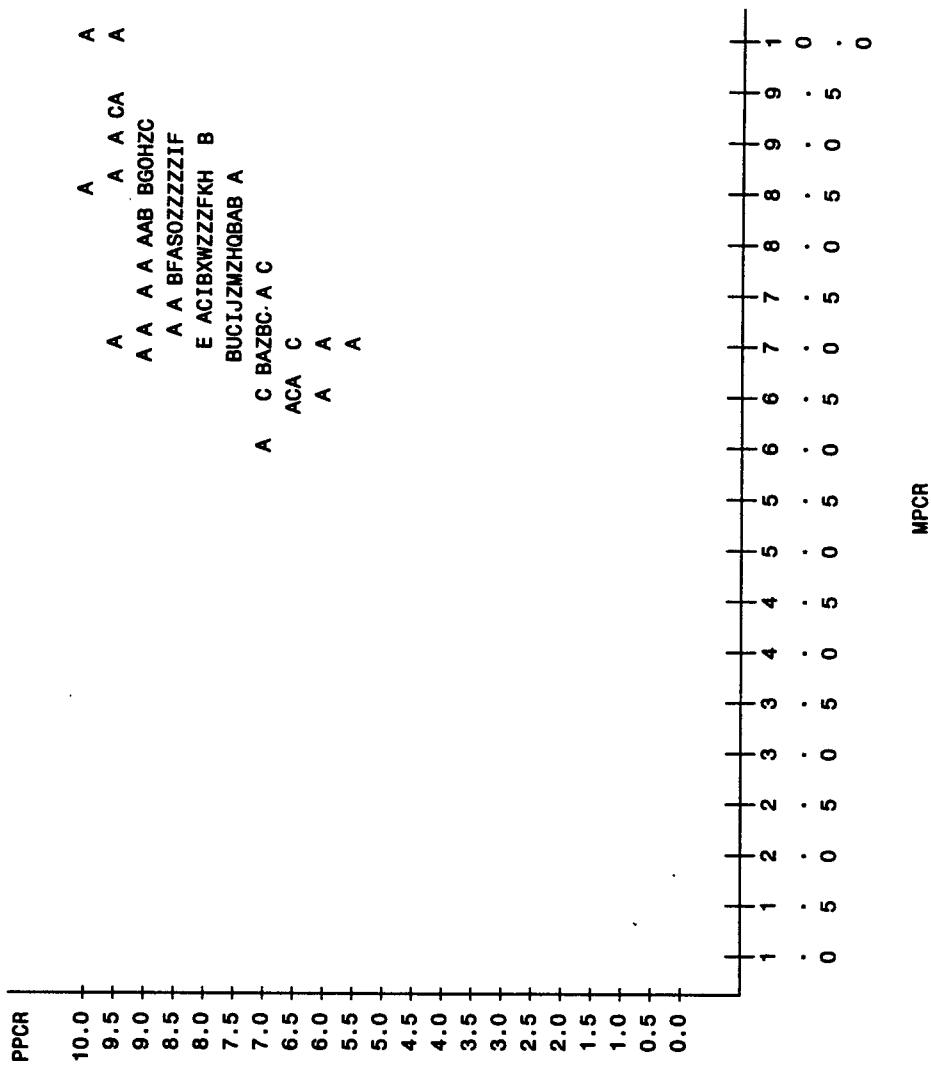


Figure D.9 Comparison Between PCR from Regression Equation and Measured PCR Primary System Resurfacing Project for Group III

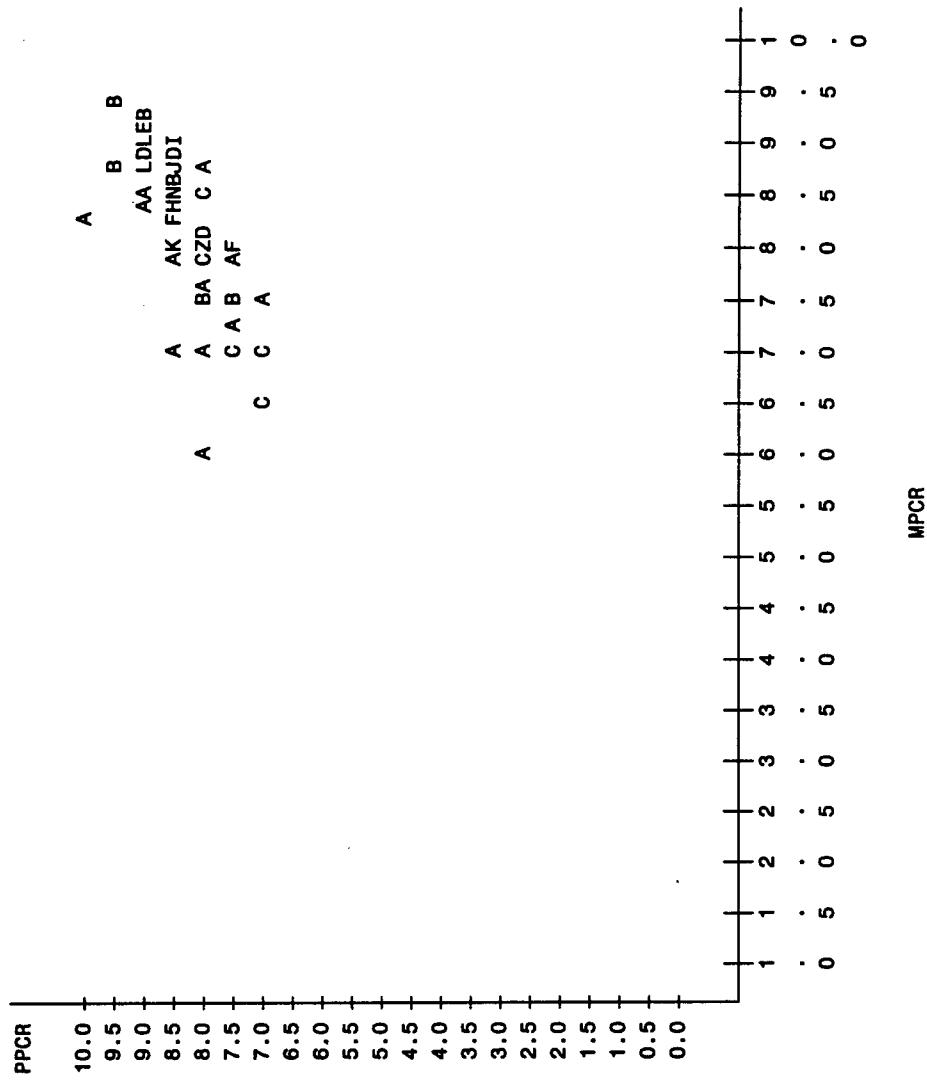
Plot of PPCR vs MPCR. Legend: A = 1 obs, B = 2 obs, etc.



NOTE: 240 obs hidden.

**Figure D.10 Comparison Between PCR from Regression Equation and Measured PCR
Interstate System Resurfacing Project for Group III**

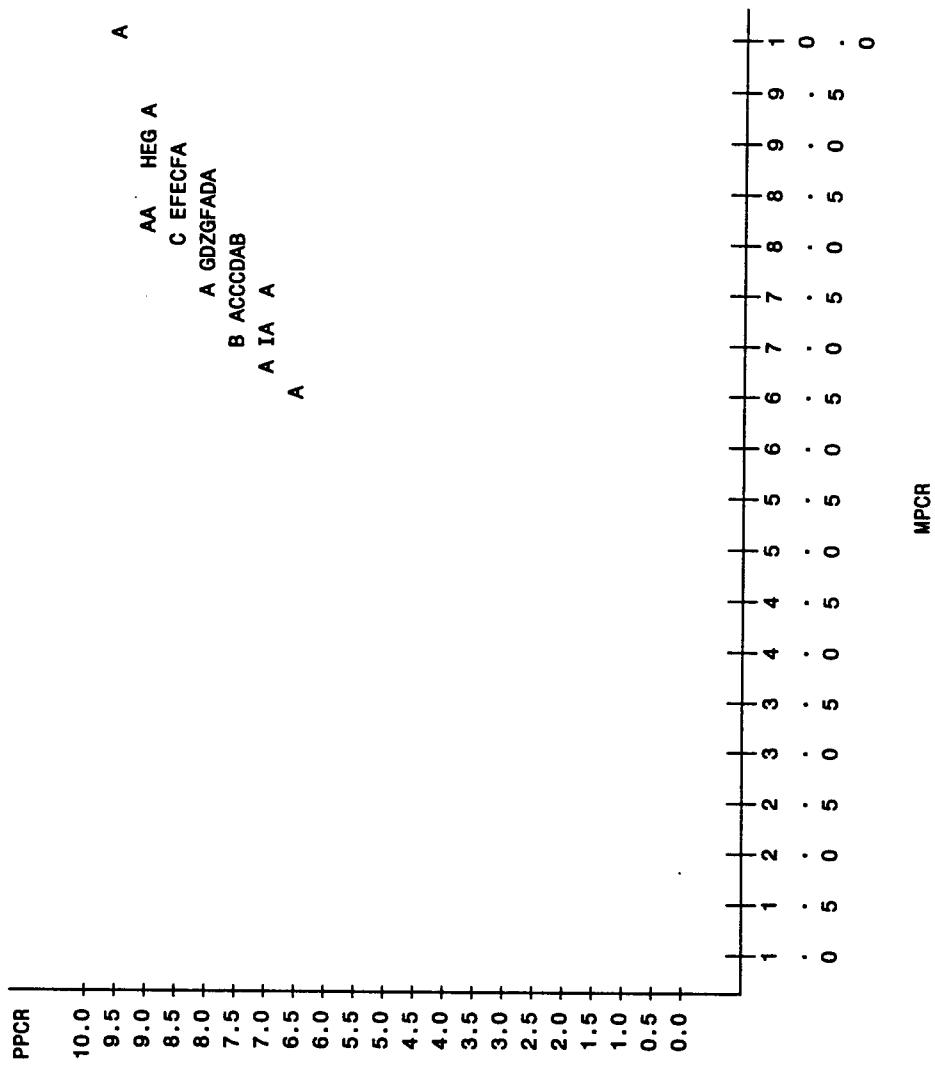
Plot of PPCR*MPCR. Legend: A = 1 obs, B = 2 obs, etc.



NOTE: 17 obs hidden.

Figure D.11 Comparison Between PCR from Regression Equation and Measured PCR Reconstruction project for Group III

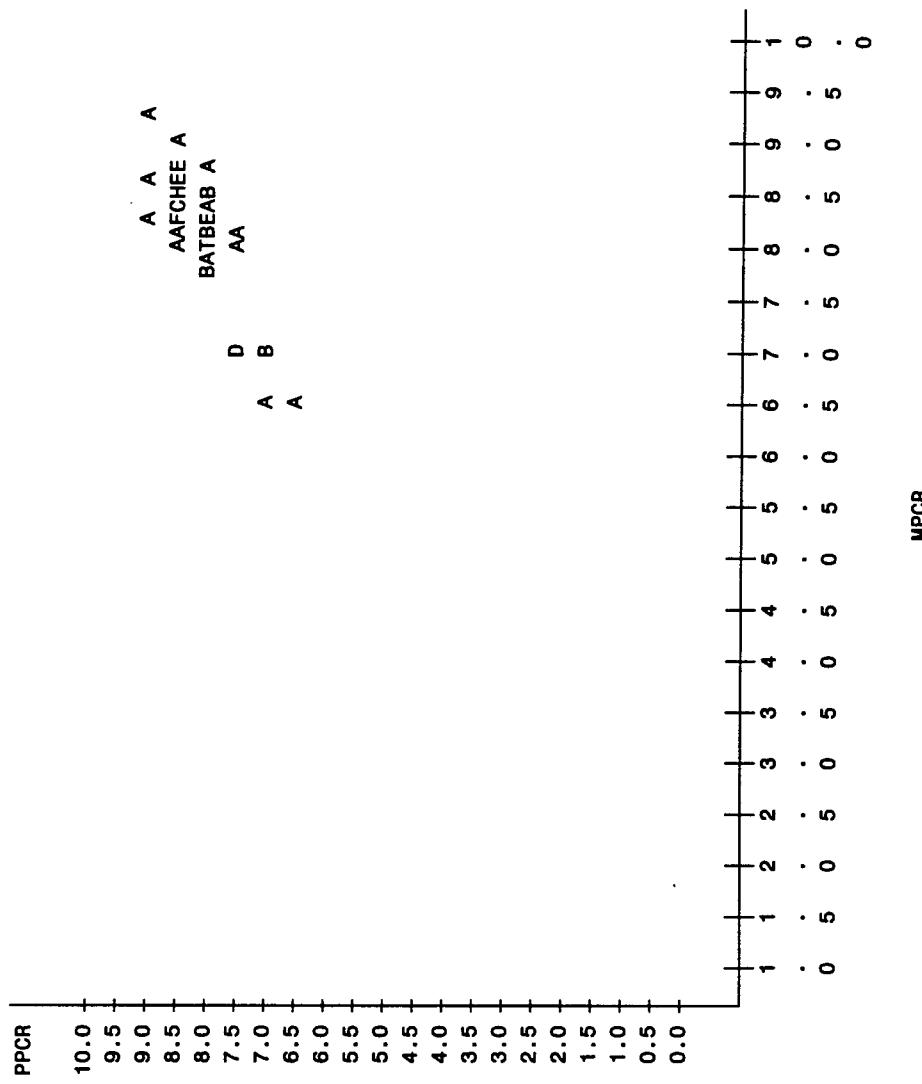
Plot of PPCR^*MPCR . Legend: A = 1 obs, B = 2 obs, etc.



NOTE: 14 obs hidden.

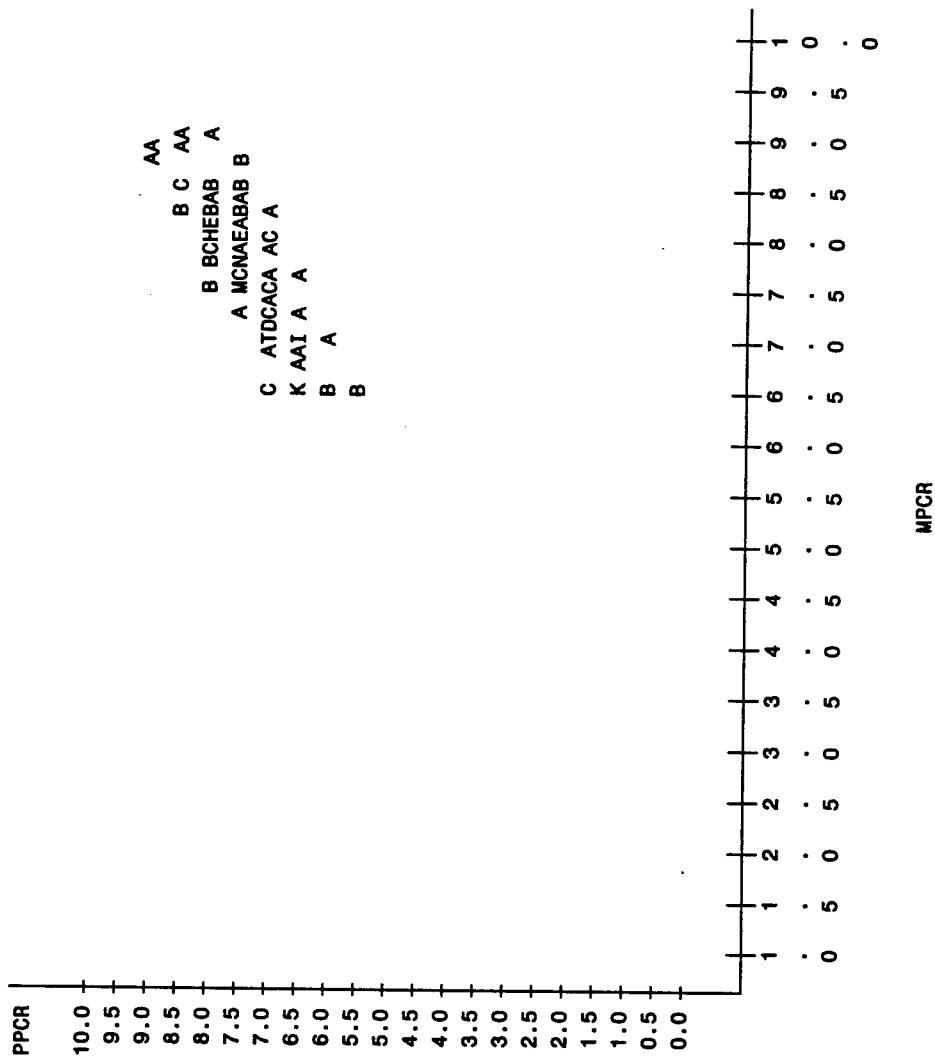
**Figure D.12 Comparison Between PCR from Regression Equation and Measured PCR
New Construction project for Group III**

Plot of PPCR*MPCR. Legend: A = 1 obs, B = 2 obs, etc.



**Figure D.13 Comparison Between PCR from Regression Equation and Measured PCR
For 1994 data points only, Group III**

Plot of $\text{PPCR} * \text{MPCR}$. Legend: A = 1 obs, B = 2 obs, etc.



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